MA LIGHTING

# grandMA

## User's Manual

Version 4

CE

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Version 4.2 04/2003

CE

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# Explanations

➠ see

**Important!**
**Attention!**

Information
Note

# 1 Introduction

## 1.1 General Information

Combining an approved concept of operation, an outstanding product design and first-class quality with a host of new ideas and the latest technology, this new console offer ulitmate control on larger shows. The grangMA range combines the best in mechanical design with a flexible and powerful software platform.

MA users will feel very familiar with ***grandMA*** from the very beginning. The basic operation modes, well known from the Scancommander have been well proven in the field as powerful tools for the control of intelligent fixtures and many are now the standard of the industry. Of course, there have been quite a few improvements as controlling hundreds of channels requires intelligent solutions to time consuming operations, but essentially, the ***grandMA*** is still an MA console – easy to operate, yet very powerful.

### 1.1.1 Displays

The first remarkable feature of the ***grandMA*** are the contrast-rich, full color TFT touch screens integrated into a panel with adjustable viewing angle. Optionally supported are two external monitors. They allow for clear and precise control along with multiple visual represenations of group and preset operations, interactive output displays and different ways of cue listing.
Colors and gobos can directly be selected by labeled preset keys and allow for a fast and accurate control, while the encoders can be used anytime for fine tuning. By way of presets, stored positions can quickly be adjusted to changed arrangements.

### 1.1.2 Motorfaders

How can a console like the ***grandMA*** with just 20 faders (10 on the ***grandMA light***) possibly claim to control 4000 channels? It's not a trick, it's motorised faders. They automatically capture the actual values as soon as you switch over from one program library to another. Further special features are explained in the respective chapters following.

### 1.1.3 Programming features and data input

At first, the flexibility of the ***grandMA*** may surprise, but you have always the choice to do it "the old fashion way". Dealing with huge amounts of data will make you want to use improved ways of programming and even an automatic effect synthesizer.

### 1.1.4 Flexible Setup configuration

Because of the ***grandMA***'s flexibility, you will never lose direct access and control. View Macro keys allow to visualise current information at anytime. User profiles allow for differing window configurations to be recalled from previous shows to talyor the console for the particular type of show, Live Event, theater, Synchronised playback, nightclub, industrial, etc.

### 1.1.5 Hardware and Interfaces

The built-in Hard Disk Drive offers virtually unlimited storage capacity. The built-in flashdisk (not on the ultra-light, on which the software is on the HDD) contains the board's software and makes the ***grandMA*** independent from any external PC.

## 1.2 General Comments

This manual describes the possibilities th***at*** the ***gra***nd***MA*** has in store for you. Step by step, you will be guided through the logical aspects of working with this console.
You will soon find out, that operating the ***grandMA*** is simple and straight forward in view of the vast variety of features and options available. Once you are familiar with the basics, you will realise that you can easily try out new fuctions, as all procedures and operational modes are clearly structured.

Consequently, this manual starts with a general introduction, followed by basic settings within the Setup menu, such as selecting fixtures and dimmer channels with DMX address, modifications, etc.

Chapter 3 is dedicated to the practical aspects of setting up a Show, while Chapter 4 will show you how to create and edit Cues and Sequences. Moving on to Chapter 5, you will learn how to execute Cues, Sequences and Chasers. In Chapter 6, you will learn how to create, store and execute effects. Chapter 7 is dedicated to the Remote Control (abbreviated as "Remote") and Timecode, while Chapter 8 explains the function of Macros and the Quikey. Chapter 9 deals with the Command Line. Saving and loading your show is described in chapter 10. Chapter 11 explains the updating of the operational software as well as the fixture library, while chapter 13 is dedicated to the operation of the ***grandMA*** replay unit. Chapter 14 deals with True Tracking Backup and Playback Functions and chapter 15 provides a listing of all fixtures currently available in the library.

We are sure that you will enjoy working with the ***grandMA*** and we wish your show every success!

# 1.3 Specifications

## 1.3.1 Capacities

- 2048 control channels (HTP or LTP) with 8 or 16 bit resolution, (optional) also available with 4096 channels (on the ultra-light, only 1024 channels are possible)
- Virtually unlimited number of presets, memories, cue lists and effects

## 1.3.2 Ergonomics

- full colour TFT touch screens with a wide angle of view and 2 external (one on the ultra-light) monitors (optional)
- encoders for display setting, 5 master encoders for data entry
- 20 (10) motor faders and extra silent GO+ and GO– Buttons (10 non-motorized Faders on the ultra-light)
- Numeric keypad plus standard keyboard and mouse (only with ***grandMA***)
- Trackball

## 1.3.3 General user functions

- Constant access to single units or groups
- Fixture library with updates supplied via the Internet
- Selective programming for free combination of memories and effects
- Free switching between stage-orientated movements and DMX control (not in version 3.0)

## 1.3.4 Hardware

- Notebook Hard Disk Drive and 3,5“ Floppy Drive
- 12 MB flash memory for self-contained operating system (not on the ultra-light)
- Protection against radio interference (CE-Norm)
- Inputs: MIDI, Sound, Remote Go, SMPTE, Analogue (+10 V), DMX 512
- Output: 4 Times DMX 512 (2 on the ultra-light), MIDI, Printer, Ethernet
- Full tracking backup and sync mode with second unit

## 1.3.5 Dimensions and Weight

***grandMA***:

- Width 48“, height 6“, depth 26“ (1200 x 150 x 670 mm)
- Weight 104 lb. (47 kg) without flightcase

***grandMA light***:

- Width 29“, height 5“, depth 20“ (730 x 120 x 510 mm)
- Weight 46 lb. (21 kg) without flightcase

***grandMA* ultra-light:**

- Width 29“, Height 5“, Depth 20“ (635 x 157 x 490mm)
- Weight 28 lb. (12.8 kg) without flightcase

***grandMA* replay unit** ➠ **13** Layout and Controls ***grandMA*** replay unit

# 1.4 Installation

90–230 Volt, 40–60 Hz via Euro plug. No switching of voltage necessary.

DMX output: Complies with USITT DMX 512 (1990) protocol. The output is opto-insulated and exceeding RS 485 or RS 422. The pins in the 5 pin XLR plug are: Pin 1: ground, Pin 2: Data–, Pin 3: Data+ (pins 4 and 5: not used)

# 1.5 Safety Requirements (Important, read carefully!)

## 1.5.1 Touchscreen

Never use any sharp items when operating the touchscreens! Deep scratches will damage the screen. During operation, due to temperature fluctuations, the calibration of the touchscreens may change, so an adjustment may be necessary. ➠ **2.12** Settings in the Setup Menu (point 1)

## 1.5.2 Sockets for keyboard and mouse

These sockets are located on the rear of the unit and are very delicate; especially during transport, take care that these parts are not exposed to mechanic stress.

## 1.5.3 Transportation/Case

During transport, take care that the touchscreens are not exposed to mechanical stress. Flightcases not provided by MA Lighting have to be designed in a way that **under no circumstances** pressure can be exerted on the TFT displays.

## 1.5.4 Panel (*grandMA* only)

If the mechanical parts of the display panel have not been moved for a period of time (24 hours typically), you may feel a stronger resistance when adjusting the angle. This is normal and related to the mechanics of the pannel.

## 1.5.5 Battery (not on the ultra-light)

In case of power failure, the console offers (with fully charged battery) an emergency backup of at least 12 minutes. In case of a power failure, the console will automatically switch off after approximately another 3 minutes or another 12 minutes when CONTINUE is pressed. If **this occurs**, the console will **automatically save all data**.

When switching off the unit via **built-in power switch**, all current show data is saved automatically.

In case of an automatic shut-down after a power failure (described above), the unit must be running for **at least** 10 minutes, in order to guarantee a proper SAVE procedure the next time the unit is switched off. **By ignoring this advice the harddisk may be be damaged.**

The battery needs approximately 4–8 hours for a full recharge. Only then the battery is able again to bridge another power failure of up to 12 minutes.

According to manufacturer provisions, the battery has to be changed **after 5 years at latest**. Please attach a label on the unit, indicating the date of purchase, preferably update data etc. (choose a location, where this information can easily be seen). (This manual was printed in the year 2003.)

## 1.5.6 Harddisk

During operation, do not push or knock the unit.

The built-in notebook harddisk is secured by a rubber-upholstery, however, mechanical stress can still damage the unit and lead to e.g. a complete loss of data.

Please read the appropriate notes and warnings given under „Autosave“ and „Oops Settings“, if the unit is to be used in very loud environment!

## 1.5.7 Housing

- Do not block or cover the ventilation. If there is a high ambient temperature, the display pannel (***grandMA*** only) should be at least 5 cm open to ensure sufficient ventilation.
- Do not place any drinks on the unit.
- Do not use excessive force when adjusting the viewing angle of the display panel (***grandMA*** only).

## 1.6 General Safety Instructions

1. Read all the instructions in the user's manual, especially the safety requirements ➠ 1.5 Safety requirements
2. Follow all instructions. Keep the user's manual for later use.
3. Follow all cautions and warnings indicated on the unit.
4. Disconnect the mains plug before cleaning the unit; don't use any liquid or spray cleanser. Clean with a dry cloth.
5. Do not use the unit near water. Do not expose it to a humid environment. Do not spill any liquid over the unit.
6. Unplug this apparatus during lightning storms or when unused for long periods of time.
7. Do not block or cover any ventilation slots in the housing - they guarantee the reliable functioning of the unit and protect it against overheating. Do not install the unit into a frame unless sufficient ventilation is guaranteed. Install in accordance with the manufacturer's instructions.
8. Do not insert any objects through the slots of the unit, as these could get in contact with live parts or could cause short circuits. This may cause a fire and an electric shock.
9. Do not place the unit on unstable surfaces. It may fall and get damaged.
10. The unit is provided with a safety plug. This plug can only be used with safety sockets. These precautions should by all means be followed. If the plug should not fit into a given socket (e.g. the case with old sockets), the socket should be replaced by an electrician.
11. Do not ignore the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
12. Do not place any objects on the power cord. Protect it from being walked on or pinched particularly at plugs and the point where they exit from the apparatus.
13. If using an extension cord, make sure the rated output of all units connected in aggregate does not exceed the maximum rated output of the extension cord. The rated output of the units plugged into the socket should in aggregate not exceed 10 amperes.
14. If the power cord or the mains plug is damaged, let a qualified technician replace it immediately.
15. Only use power cords which are marked as safety-proof.
16. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. Besides others, you run the risk of suffering an electric shock.
17. All service work should be exclusively performed by qualified service technicians.
18. Do not use any high-power walkie-talkies or cellular phones near the unit.
19. If one of the following conditions occurs, **please disconnect the mains plug and call your dealer or technical support!**
    - Power cord or mains plug is damaged or worn.
    - Liquid penetrated the unit.
    - The unit was exposed to rain or high ambient humidity.
    - The unit does not function properly, even when following all the instructions in the manual. Only manipulate the controls as stated in the manual, wrong settings on the controls may damage the unit.
    - The unit fell and the housing was damaged.

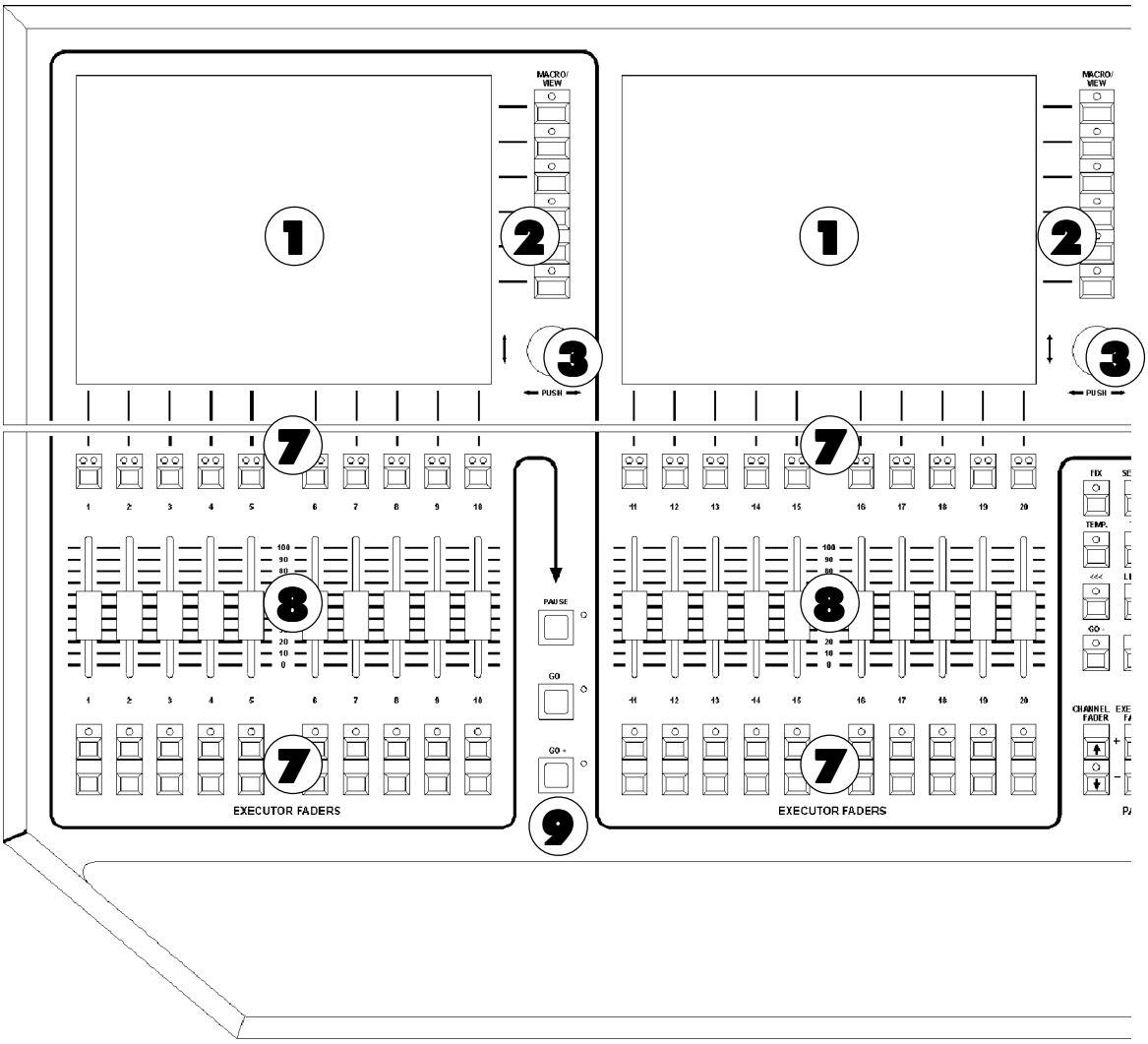
Please note that this console is based on complex software and as you probably know from your own computer experience, software crashes can occur on occasion. But be assured, that we will do our best to keep them rare exceptions.

### Electric shock warning on the rear of the *grandMA*

The unit should be serviced by qualified personnel only, as live parts may be exposed when opening and/or removing coverings; besides others, you run the risk of suffering an electric shock.

# 1.7 Layout and Controls

## 1.7.1 Layout and Controls *grandMA*




**1** **TFT-Display** Touchscreen

**2** **View / Macro keys**

**3** **Encoders** – To move/scroll the respective window contents

**4** **Encoders** – To set the attribute values such as Gobo, Pan/Tilt, times etc.

**5** **Manual Time Setting** for Presets

**6** **Yellow Knob** - To adjust the Touchscreen Panel

**7** **Playback buttons** – Can be defined as Go+, Go-, Pause, Flash etc.

**8** **Executor faders** – Can be defined as Master, Swap Master, X-Fader etc.

**9** **Go+, Go–, Pause buttons** – Only effective for the default sequence. The default sequence can be assigned using the ***Select key*** (recognisable by the green title bar of the small EXECUTOR window above it).

**10** **Select key**

**11** **Keys** – To directly process Go+, Go– etc. for any Executor, or to lock Executors

**12** **Page change-over** – ***For Channel faders, Executor faders and Executor keys***

**13** **Executor buttons** can be defined e.g. as Go+, Go–, Pause, Flash etc..

**15** **Select –** Cues, Groups, Executors etc. in combination with numeric keypad

**14** **Manual Timing** – Setting for Executor-Buttons

**16** **Blind, Freeze, Clear keys**

**17** **Blackout key** for Dimmer channels

**18** **Grand Master** for Dimmer channels

**19** **Numeric keypad**

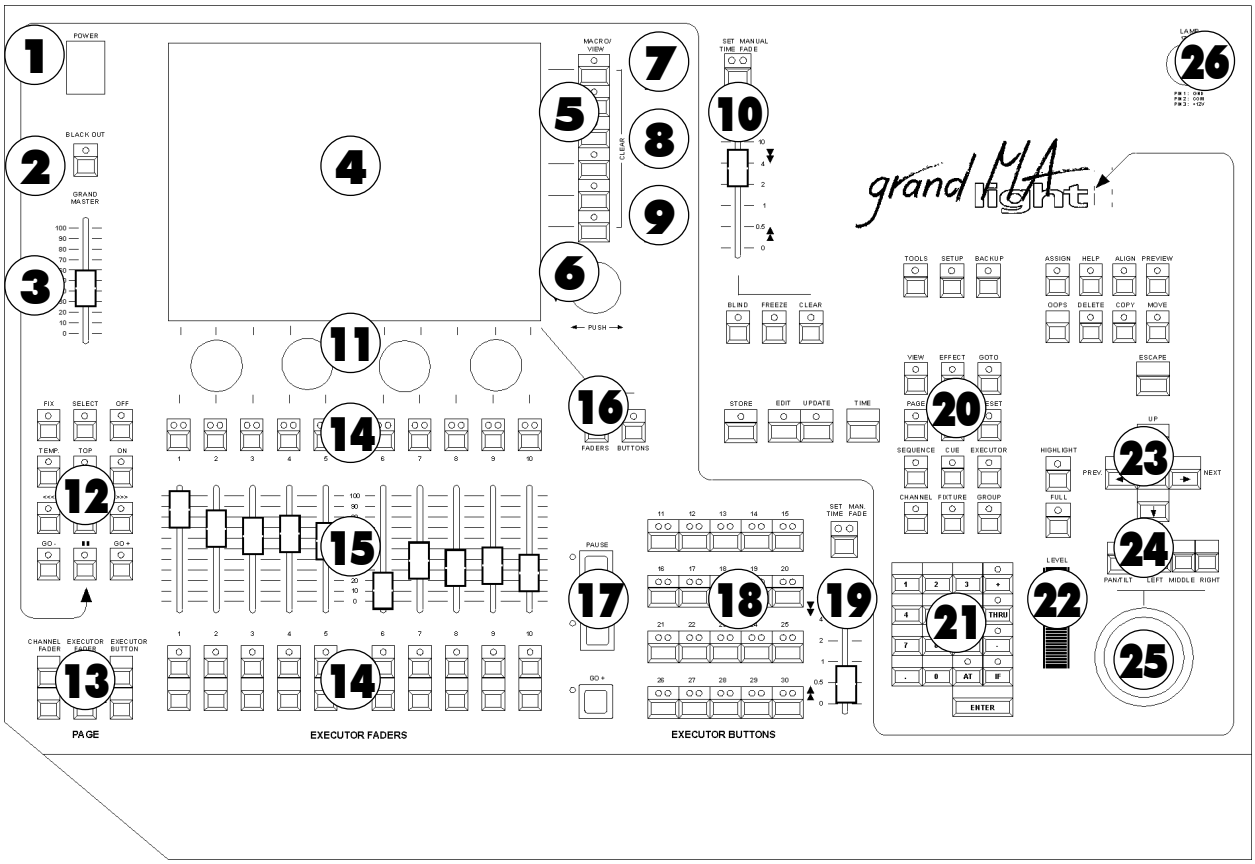
**20** **Intensity wheel**

**21** **Cursor keys** NEXT, PREV. Choosing Fixtures or Channels one by one within Groups.

**22** **Trackball** for Pan / Tilt- or mouse function

**23** **Trackball ON** If the LED in the key is on, the trackball can be used to modify the PAN/TILT value; if the LED is off, you can use the mouse cursor arrow; if the LED blinks, the mouse function can also be controlled using the PREV/SET/NEXT keys. The functions can be switched on/off in the Default menu ➠ **2.14**.

## 1.7.2 Layout and Controls *grandMA light*




## 1.7.3 Layout and Controls *grandMA* ultra-light (similar to *grandMA* light picture)

Items **7** and **17** do not apply (keys inexistent).
Item ***22*** (Wheel) does not apply, can be controlled by Trackball (item ***25***) and Wheel key (item ***24***).

## 1.7.4 Layout and Controls *grandMA* replay unit

➠ **Chapter 13**

**1** **Power switch**

**2** **Blackout key** for Dimmer channels

**3** **Grand Master** for Dimmer channels

**4** **TFT Display** touch screen

**5** **View / Macro keys**

**6** **Encoder** for moving / scrolling the respective window contents

**7** **Viewpool key** for opening a window on the TFT display with all the created VIEWS in the show. These can then be recalled up directly by selecting the required view.

**8** **Background key** - If on the TFT display, Views are being overlayed by a menu (ASSIGN, EDIT, ....), you can use this key to bring up or hide the menu.

**9** **Keyboard key** to bring up the Soft Keyboard on the TFT display.

**10** **Manual setting of time** for Presets

**11** **Encoder** for setting the attribute values (e.g. Gobo, Pan/Tilt, times, etc.)

**12** **Keys** to directly execute functions like Go+, Go-, etc. for arbitrary executors, locking executors, SELECT key

**13** **Page flipping** for Channel fader, Executor fader and Executor buttons

**14** **Playback buttons** can also be defined as e.g. Go, Go-, Pause, Flash, etc..

**15** **Executor faders** can also be defined e.g. as Master, Swap Master, X-Fader, etc..

**16** **List keys**
**Faders:** will bring up small Executor windows for the EXECUTOR FADERS.
**Buttons:** will bring up small Executor windows for the EXECUTOR BUTTONS.

**17** **Go+, Go–, Pause button** – Will only effect the default sequence. A default sequence can be assigned by using the ***Select key*** (indicated by the green title bar in the small EXECUTOR window displayed above).

**18** **Executor buttons** can also be defined as e.g. Go, Go-, Pause, Flash, etc..

**19** **Manual setting of times** for Executor buttons

**20** **Choosing** Groups, Executors, etc. in combination using the numeric keypad

**21** **Numeric keypad**

**22** **Intensity wheel**

**23** **Cursor keys** NEXT, PREV. Groupwise Calling up of scanner or dimmer channels one after the other.

**24** **PAN / TILT key,** changing over the function of the trackball to mouse functions (LED off) or to Pan / Tilt functions (LED on)

**Left / Middle / Right key** for Mouse functions

**25** **Trackball** for Mouse or Pan / Tilt functions

**26** **Socket for console lamp** 12V/5W

## 1.7.5 *grandMA* light and ultra-light: Differences to the *grandMA*

The software for the ***grandMA*** light and ultra-light and the ***grandMA*** is nearly identical.

The product will not be delivered with a hardware keyboard and an external mouse. An additional external keyboard and a mouse, however, can be connected on the rear of the unit.
Using the KEYBOARD key on the TFT display, a Soft Keyboard can be brought up that can be operated via the touch screen. The Soft Keyboard will only appear, if entries are possible.

If the trackball is switched to mouse function (LED in the PAN / TILT key is off), you can perform mouse functions using the trackball or the LEFT-MIDDLE-RIGHT keys.

## 1.7.6 General Operation

### Touch screen

- Keys can directly be selected.
- In charts, individual cells can be selected. By using the Lasso function on the touch screen, you can also select several cells.
- You can simultaneously select individual, but also several Fixtures or Channels by clicking and dragging with the mouse on touch screen.
- Directly activating title bars of windows or opening options for the individual window by touching the corner icon.

### Encoder on the right of the Display

- In the active window, the focus (coloured frame) or a highlighted cell (red/blue background) can be moved upwards or downwards. By pressing the Encoder when turning it, you can move the focus to the left or to the right.
- If a pulldown menu is opened, you can use the Encoder to scroll through the list. When you reach the desired value, you can select it by a pressing the Encoder.
- If in a chart, a cell is selected with a value or a time, you can open an entry window by pressing the Encoder. In this window, you can also use the Encoder to adjust the value, pressing the Encoder again will accept the new value.
- If a Fixture or a Channel is selected (coloured frame), you can open the options by shortly pressing the Encoder.

### Encoder below the TFT Display

The currently chosen function is displayed above the appropriate Encoder.

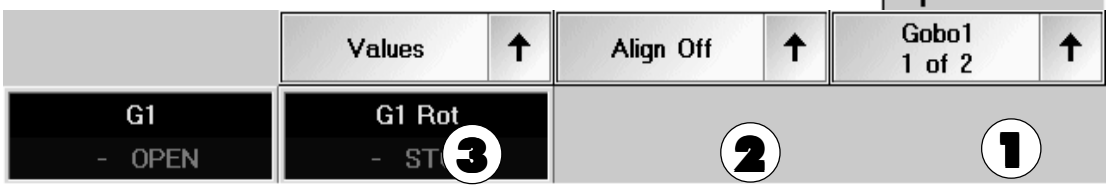
The currently set value for the last activated lamp is displayed below the respective function. The values displayed (percent, decimal, ...) do always refer to the active window (e.g.: Fixture- or Channel-Sheet).

Use the encoder to modify the values of this function. If you press the Encoder while turning it, you can modify its sensitivity (default setting ➠ **2.13** item ***6***).

**1** By pressing the respective button, you can select the next function (in this case Gobo1). Pressing on the arrow will open a menu in which all functions are displayed and can be selected directly.

**2** Pressing on "Align Off" allows you to select the individual Align functions. Pressing on the arrow will open a menu in which the respective function can be selected directly.

**3** Default setting is "Values"; by pressing the button shortly, you can switch to "Fades" and, pressing the button again, to "Delays". Pressing on the arrow will open a menu in which the respective function can be selected directly.




### *grandMA* Hardware keyboard or *grandMA* light and ultra-light Soft (TOUCH) Keyboard

- Views, Groups, Presets, Sequences, Effect groups, Forms or Macros can directly be named within the respective pool.
- Cue names can be adjusted in the EDIT menu, in the Tracking or EXECUTOR Sheet.

**If the "Scroll Lock" function is activated, all entries on the keyboard will be entered directly to the comandline (Scroll Lock LED on keyboard is lit). By pushing "Scroll Lock" briefly, you can toggle this function ON or OFF.**

## *grandMA* Mouse or *grandMA* light and ultra-light-Trackball

The most effective way of working with the ***grandMA*** is to use the touchscreen and the encoders which are located next to the respective displays. The only means to change the size of windows, work within the Tracking Sheet or edit forms (**6.7.2** Modifying Forms), though, is the mouse (or the Trackball, if the mouse function is on).

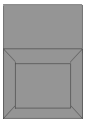
**With the left key:**
– Keys can directly be selected,
– Individual cells in charts can be selected,
– Several cells in charts can be selected simultaneously by clicking, holding and dragging them,
– Fixtures or Channels can be selected,
– Title bars of windows can be activated or options for the individual window can directly be called up.

**With the middle key:**
– The values of selected Fixtures or Channels can be adjusted.

**With the right key:**
– The options for this window can be opened by clicking on the title bar,
– The options can be opened by clicking on an individual Fixture or Channel.

## OOPS Function

OOPS



By pressing the OOPS key, you can undo (step back) the last 20 operations.

Holding the OOPS key opens a window showing the 10 last entries on the right TFT display. Pressing the UNDO key will cancel the first entry on top of the list. ➡ **2.12** OOPS Function Options

***Note: Please, switch off the Oops function in loud environments, as otherwise, the built-in harddisk may not function properly.***

### *Entry window/Calculator*

Open by pressing on one of the 4 Encoders below the display or clicking on the Buttons above the Encoders.

**Or:**

Click into a cell (indicated by the Focus - colored frame and/or blue background) and press on the Encoder on the right side of the display.

In this window, you can enter values or times and recalculate them.
Presets can be called up for the selected Fixtures or Channels.

If in the Executor Sheet or in the EDIT menu, a trigger call or time is selected, you can open this window by pressing the Encoder on the right side of the Display.

If Fixtures or Channels are selected, this window can be opened by pressing the respective keys for this function above the Encoder.

The title bar of this window will display the selected function. In the upper cell, the current value will be displayed.

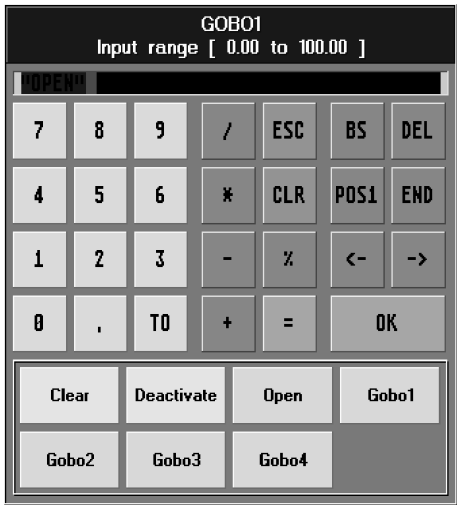
Using the touch screen, the number pad or turning the encoder on the right of the display you can enter a different value or time, and accept it by pressing the OK key.

Left of the numbers, the following keys are displayed: H (for hours), M (for minutes), S (for seconds) and F (for frames). With these keys, you can directly enter times, if necessary.

**or:**

If a function is selected, keys for Clear, Deactivate and the individual presets are displayed in the lower part. If you press CLEAR, the values of the selected Fixtures or Channels will be deleted. If you press DEACTIVATE, the active values of the selected Fixtures or Channels will be deleted.

If you select a Preset, it will be displayed in the upper bar, and you can select it pressing the OK key.
Entries can be deleted using the OOPS-key.



## SOFT (TOUCH) Keyboard

On the ***grandMA*** light and ultra-light, you can call it up by pressing the KEYBOARD key.

In the upper left cell, the entered text will be displayed.

Using the touch screen, you can select individual keys.

Pressing RETURN will accept your entry.

# 1.8 Quick Reference

After many years of experience we have lost our illusions about any user to be willing to read an entire manual before playing with a new toy. But here are some tips which may help you to find your way around.

## 1.8.1 Basics

The ***grandMA*** is a highly specialised computer with up to 6 monitors. Many functions will work as you are used to from your PC or MAC.

**Main supply:** 90–230V

**The mouse** in its drawer (***grandMA*** only) or trackball on the ***grandMA light*** & ***grandMA ultra-light***:
– Left click selects a field for keyboard or encoder input, etc.
– Right click goes to Modify (opens windows with options, sorting columns by clicking on the headline...)
– Pressing and holding the middle mouse key changes output values (Hold and Move)

**The displays** (select one by a click into empty space)
The ***grandMA*** offers different windows: Menus with information and control keys, spreadsheets, key groups, dimmer channel listings and fader symbols
– Clicking and dragging using the left mouse key on the headline moves a window, you can alter the size by clicking and dragging the left and bottom edges.
– Right clicking with the mouse on the headline of a window opens options menu for that window.

**Spreadsheets** (comparable to those used in Excel or Access):
– Click and drag with the left mouse key and you can select a range of cells (not on all screens possible)
– Left click on a column headline will resize or move the column
– Right click on a column headline will sort by this column

**Emergency help:** Like any computer, the ***grandMA*** may crash. To resolve a crash:
1. Perform a reset (by pressing CTRL-ALT-DEL or the RESET key on the backside of the unit).
Only if this doesn't help:
2. During the booting of the unit, use the red "Utility menu" to delete the current Show. ➠ **12** Utility Menu
In case of any further problem, please feel free to contact your dealer or our HOTLINE +49-5251-688865-99.

## 1.8.2 Setup and start

The easiest way is to use the BACKUP key and load a demo-show or start show. Alternatively:

1. SETUP key: Will allow you to select and patch the number of dimmers and fixtures, create presets, groups and effects.

2. Right click or touch in any empty display:
– creates, moves and resizes a FADER or CHANNEL window for dimmer control and FIXTURE, GROUP and different Preset windows (PAN/TILT, GOBO...) for fixtures.

## 1.8.3 Direct access

The ***grandMA*** offers many different ways of controlling dimmer values and fixture attributes. For speed, we give you only one example for each of them.

**Setting values for dimmers:**

CHANNEL FADER "–" or "+" key toggles the motorised faders to control single dimmer channels.
– "+" and "–" scrolls in blocks of 20 (10 on the ***grandMA light***) dimmers.
– The set fader values are shown in the dimmer display.

**TIP** Channels can also be selected and modified by the mouse, wheel, encoder and the keypad.

**TIP** With the LINK function (right on top of channel and fader sheets), the window will automatically scroll to show the channels set for the faders.

**Controlling Fixture attributes:**

**GROUP window**
Select a fixture by its key (or click on the name of a fixture in the fixture sheet).

**GOBO, COLOUR ... window**
Open a preset for the selected unit (if no presets are displayed, run the selected function via an encoder).

**TIP** Pressing and turning the encoder allows for fine tuning.

## 1.8.4 Storing Settings

The STORE key of the ***grandMA*** is very flexible.

**TIP** If the STORE key is flashing, you can switch it off with a second press or use ESCAPE.

**Example:** Select some fixtures and set the color wheel

- STORE + one of the buttons above or below an EXECUTOR fader (make sure you have toggled back from CHANNEL to EXECUTOR): Stores the color setting as a cue on that Executor.
- STORE + one of the buttons of an EXECUTOR fader, where a cue was already stored, gives you the option to overwrite, merge information or create a second cue. ➡ **1.8.7** CREATE LIST
- STORE + a cell in the GROUP window: Stores the chosen Fixtures as a new group (enter a name via keyboard)
- STORE + any cell in the preset COLOUR window: Stores the values as a color preset (enter name via keyboard)
- STORE + one of the VIEW keys on the right hand side of the displays: Stores the layout of the screen, the mouse position, etc. as a view (enter a name ...)

**TIP** With STORE + VIEW key you can store screens individually or all console wide.

**TIP** In the ASSIGN menu, you can enter names sequences of cues.

## 1.8.5 Selecting and activating channels, fixtures and functions

Selecting and Activating have different meanings and are important terms and concepts when working with the ***grandMA***.

Selected fixtures or channels are what you are currently working with, you can tell what is selected by their names in fixture / channel sheet being yellow. Active values determine which channels and parameters are to be stored in the next cue and will be controlled by this cue later on. Values with a dark red backround will be stored in the next cue, values with a bright red background are currently under your control and will also be stored in the next cue. Channels not active when the cue is stored will not be affected by the playingback of this cue. Selected fixtures or channels are automatically deselected if a setting was altered and new fixtures selected (a single press of the CLEAR key will do the same).

Changing the selection:

- Any channel or function, being controlled in Direct Access mode, is automatically marked as selected.
- Pressing the CLEAR key several times, deletes the whole selection.
  1st CLEAR: deselects – 2nd CLEAR: deactivates– 3rd CLEAR: deletes all values set by direct access and returns the values to their defaults or to being controlled by playback.
- Selecting a channel, fixture or function multiple times can be used to modify an activation
  1st selects – 2nd activates all parameters – 3rd deactivates all parameters

**TIP** By holding the STORE key and selecting ALL, the activation will be ignored and the complete console output stored as a cue.

## 1.8.6 Timing – Fade times (FADE) and Delays (DELAY)

The ***grandMA*** offers two different ways of storing time settings for a cue:

1. BASIC X-FADE and SNAP DELAY
   With STORE, a basic fade time can be set for all typical fader channels, whereas SNAP DELAY will only work for channels marked as snap channels in the Patch menu.
2. TIME key for individual durations per channel
   With TIME, the status windows can be switched to the FADE or DELAY layer, where individual fade and delay times can be set for each channel. These durations will be stored in the cues and will overrule any basic duration.

## 1.8.7 CREATE LIST

When storing a cue to an Executor already containing a cue, the ***grandMA*** offers the option to create a second cue and start a cue list, which may be replayed as a Chaser or sequence later on.

In the ASSIGN menu, you can preset the Cue list as tracking or non-tracking, respectively.

**TRACKING CUELIST** (typically for moving light control or theatre applications):
When working with a tracking cuelist it only makes sense to store values that have changed. On playback, the ***grandMA*** will hold a parameters value until it is given a new value by subsequent cues.

**NON-TRACKING CUELIST**
With a non tracking cuelist, all values to be playback have to be stored in each respective cue, as all values not stored within a cue, will be switched off (“0” or default).

### 1.8.8 Playback buttons and faders

- The motor faders allow to work on different pages simultaneously. With OFF, playback of cues loaded onto executors can be stopped.
- With the ASSIGN + EXECUTOR buttons, you can define, which sequences with which functions are to be playbacked on executors.
- The 12 function keys can be used for any Playback (OFF - EXECUTOR1).

**TIP** To call up a cue with a fader, it has to be activated via GO+, TOP or ON.

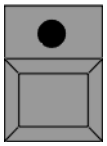
**TIP** Watch out for the GRANDMASTER - or simply switch it off in the Setup menu.

# 2 Setup

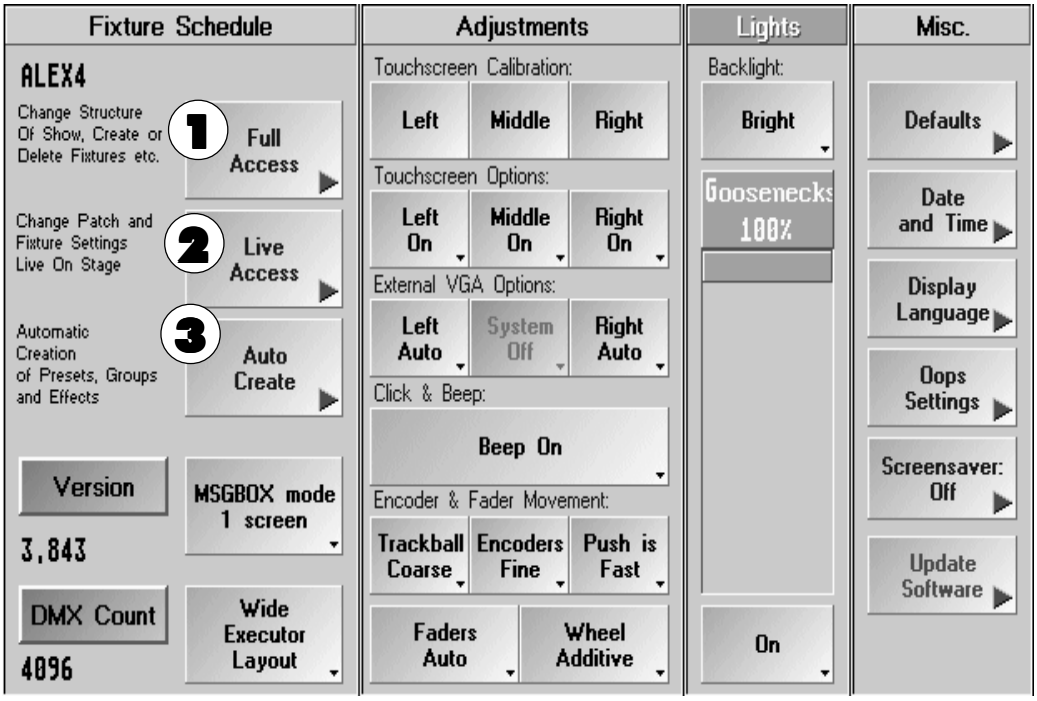
The Setup menü is displayed only on the right screen (grandMa). In case of a failure of these screen press F3 to display the menues of this screen on an external screen.

## 2.1 Selecting, patching, creating and editing of fixtures and dimmers, Stage Setup (Edit Show)

**SETUP**



You will reach the SETUP menu by pressing the SETUP key.




### FIXTURE SCHEDULE

### 1 Full Access

In the Full Access menu, you can define the number of Scanner and Dimmer channels and assign DMX addresses. Furthermore, the stage can be adapted and Scanners and Dimmers be positioned accordingly.

Only in the Full Access menu can you modify the complete Show. If using the console in the Multi User mode, you can access this menu only from a console. ➡ **2.2** All Access

When adapting a Show, a copy will be used; the modifications will only be available when they are saved.

Accessing this menu will take a few seconds, as all Fixtures (approx. 300) will be loaded from the hard disk.

### 2 Live Access

There are certain limitations when it comes to modifying a Show. These modifications will be executed **immediately**. In the Multi User mode, the Show data can be adapted by multiple users simultaneously. In the Live Access menu, you can e.g. assign DMX addresses. Furthermore, the stage can be adapted and Scanners and Dimmers be positioned accordingly. Additionally, adaptations can be made in the Attribute Setup.

It is not possible, to sign on or delete new lamps in the Show.

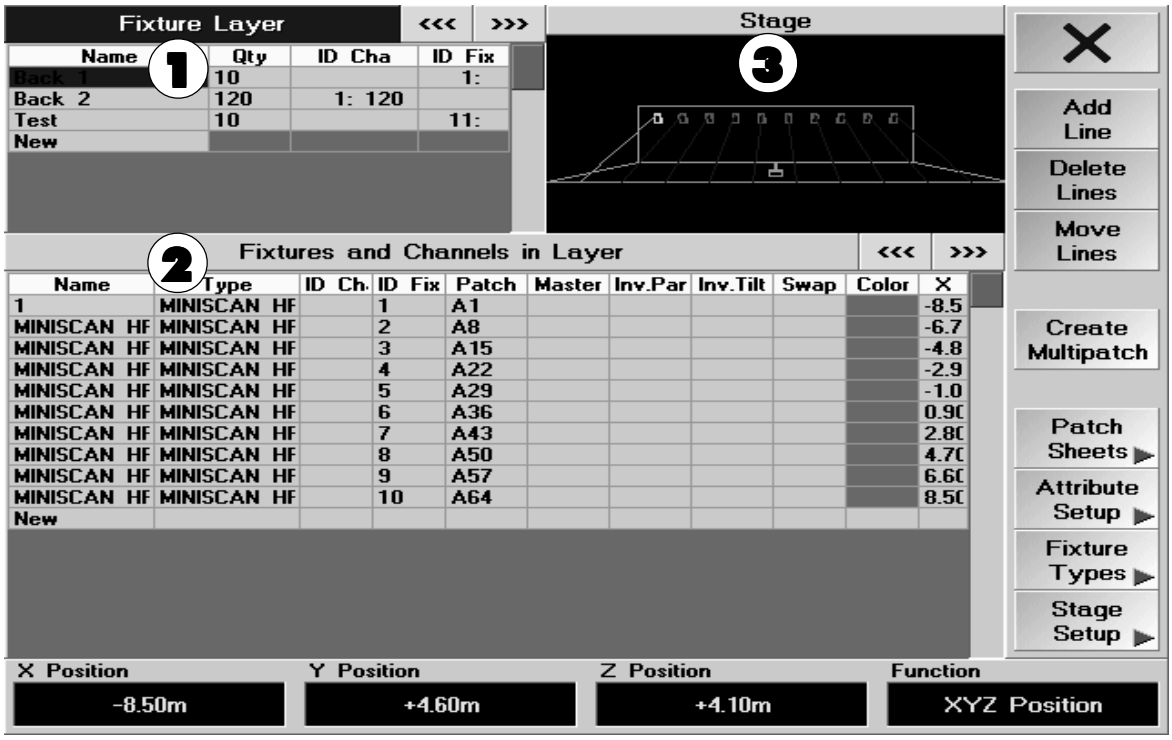
***The PDA remote control does have the status of Live Access only***.

### 3 AUTO CREATE

In this menu, you can e.g. have presets automatically created for all your fixtures and dimmers, as long as those presets are already contained in the internal library. Premade Effects and Groups for each Fixture or Dimmer channel can also be created. ➡ **2.11** Creating presets, effects and groups automatically

## 2.2 Full Access or Live Access menu

Select Full Access in the Setup menu




**1** Fixture Layer: Here, you can create Scanner and Dimmer groups.
These groups can be modified later without any problems, e.g.: increase number, change the lamp type etc.
Additionally, you have an overview over the number of all signed-on lamps and their ID numbers for Channel and Fixture.

### 2.2.1 Creating groups with Scanners/Dimmers (Fixture Layer)

Press the “Add Line“ key (Fixture Layer must be active, i.e. header dark blue).

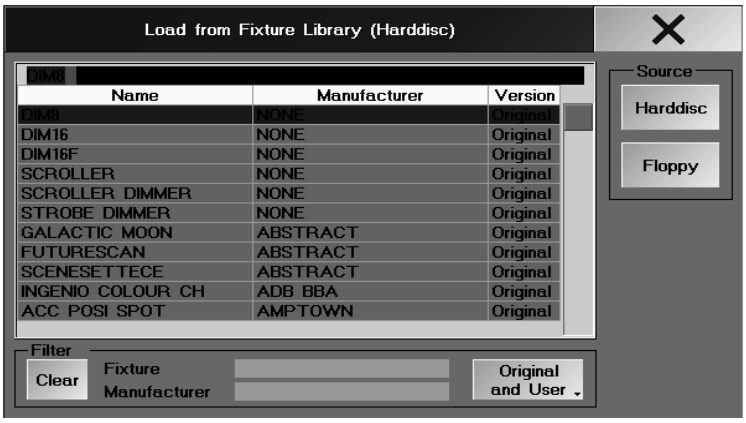
A window will open, where you can enter a name for the group and must confirm this action.

Now, the “Create New Fixtures or Channels“ window will open. When opened for the first time, only “From Library“ will be displayed here and is already selected (indicated by its blue background).
When selecting “From Library“, the library window will open:

By turning the Encoder, you can only choose a lamp type (blue bar).

Pressing the Encoder will accept the chosen lamp type and close the window.

To load a lamp type from floppy, press the “Floppy“ button. Now, the Scanners present on the floppy will be displayed and can be selected and loaded.

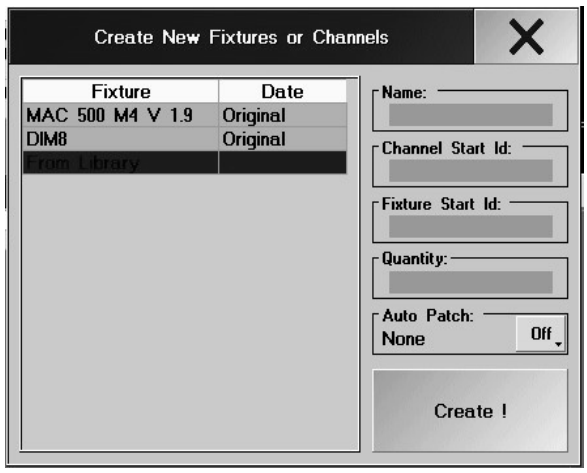


For conveniently localizing scanners (fixtures), the list can be sorted by name, manufacturer or date. Example: Sort alphabetically: Make a right mouse click on NAME. Clicking once will sort the list A–Z, on the second click Z–A.
**or:**

You can use a search filter: Select the manufacturer column on the side of “Filter“, and enter the first character of a manufacturer. Now, only the models produced by this manufacturer will be displayed.

Channel Start ID: Here, you can set the first ID number of the Dimmers. These are then displayed in the Channel and Fader Sheet.
The Dimmer channel of Scanners could also be used in the Channel and Fader Sheet. In order to do so, you would have to assign "Channel-IDs" for the Scanners first.

Fixture Start ID: Here, you can set the first ID for the Scanners. These are then displayed in the Fixture Sheet.
Dimmer channels can also be used in the Fixture Sheet. In order to do so, you would have to assign "Fixture IDs" for the Dimmer channels first.




Finally, you have to set the number of selected fixtures under „Quantity" (numeric keypad or keyboard).

***Autopatch*** displays the next available DMX-channel; in position ON this channel will be used after presing CREATE; in position OFF (default) any other available channel can be used ➠ **2.2.2**

Pressing "Create !" will accept the settings for generating fixtures later on.

## 2.2.2 Patching Scanners/Dimmers

**2** The lower part of the window shows the Scanners/Dimmers of the selected „Fixture Layers".
Select a fixture in the "Patch" column (blue background).

If all fixtures of these "Fixture Layers" are to be patched one after the other, you can select all of them together by clicking on the column title (in this case PATCH). Now, all fixtures are displayed on a blue background.

Pressing the Encoder will open this menu:

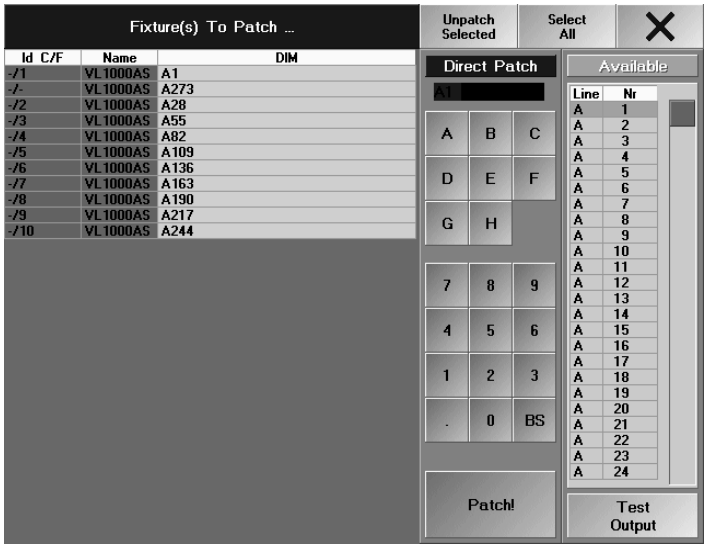
Below "Direct Patch", the first free DMX channel is displayed.

First, you have to set the DMX output (e.g.: A, B, ...), then the (first) DMX channel.
Finally, press the "Patch!" key. That's all.

**or:**

All free channels are displayed in the right column. By turning the Encoder, all invisible channels can be displayed and selected. Pressing the Encoder will accept the channel.

If the TEST OUTPUT button is pressed (green background), the selected DMX output channel is set to 100%. This accelerates the localizing of a patched channel in the stage setup.




Now, the selected and patched fixtures can bei positioned in a 3D stage display.

If you don't need this function, you can leave the menu by pressing the "X" key. A window will open, in which you can save the modified settings by pressing "Save". Pressing "Don´t Save" will discard the modifications; with "Cancel", you stay in this menu.

## 2.2.3 Position of fixtures

**3** In the upper right part of the window, you'll find a simplified representation of the stage that can be used to position the fixtures. Settings will also be taken over onto the ***grandMA*** 3D.
If this part of the window is active (title bar "Stage" is displayed in dark blue), you can modify the stage view by turning or turning plus simultaneously pressing the Encoder.

### Setting the stage size

In the geometrical system of the ***grandMA*** (Stage window) or in the ***grandMA*** 3D, you can position objects in the three-dimensional space.
It is modelled on the geometrical system used in architecture: The X/Y level is defined as base area (stage) and the height as Z axis.

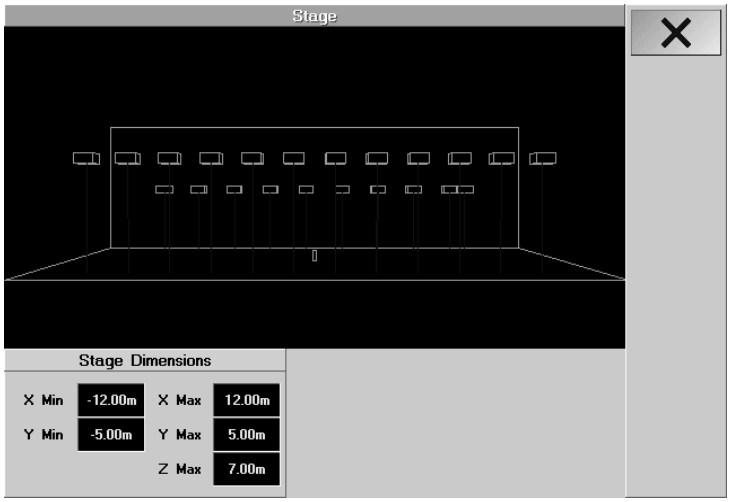
To adjust the stage size, press the "Stage Setup" button.

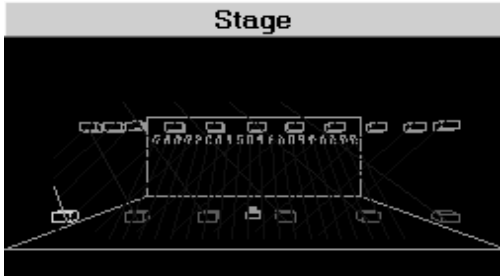
The following window will open:

Click on the values you want to change. A small dialogue window will open, in which you can adjust the size.
The values do always refer the center of the stage.

By just turning or turning and simultaneously pressing the Encoder, you can modify the Stage views.

By pressing the "X" key, you can leave the menu.




### Positioning the fixtures

Select a fixture in the lower part of the window (blue background); the fixture will now be displayed in dark green in the stage view.

If this part of the window is active (title bar "Stage" is displayed in dark blue), you can modify the stage view by turning or turning plus simultaneously pressing the Encoder.

Now, you can set the position using the 3 left Encoders below the Display. By pressing the right Encoder, you can switch from Position to Rotation. Now, you can turn the fixture by using the Encoders.

In the lower part of the table, the set values are displayed.
To switch the table view, press the Encoder (right of the Display) and turn it simultaneously; now, the view switches to the right side. Turn until the columns for positions X, Y, and Z and rotation X°, Y°, Z° are displayed.

Fixtures and Channels in Device Layer

| Name | Inv.Tilt | Swap | Color | X | Y | Z | X° | Y° | Z° |
|---|---|---|---|---|---|---|---|---|---|
| MAC 2000 P | | | | -8.10m | -5.00m | 5.80m | 0.00° | 0.00° | 0.00° |
| MAC 2000 P | | | | -6.90m | -5.00m | 5.80m | 0.00° | 0.00° | 0.00° |
| MAC 2001 P | | | | -6.00m | -4.70m | 5.90m | 0.00° | -3.00° | -3.00° |
| MAC 2002 P | | | | -3.90m | -5.00m | 5.80m | 0.00° | 0.00° | 0.00° |
| MAC 2003 P | | | | -1.90m | -5.00m | 5.80m | 0.00° | 0.00° | 0.00° |
| MAC 2004 P | | | | 0.20m | -5.00m | 5.80m | 0.00° | 0.00° | 0.00° |
| MAC 2005 P | | | | 2.10m | -5.00m | 5.80m | 0.00° | 0.00° | 0.00° |

Now, you can leave the menu by pressing the "X" button. A window will open, in which you can save the settings by pressing "Save". If you press "Don´t Save", the modifications are discarded, with "Cancel", you stay in this menu.

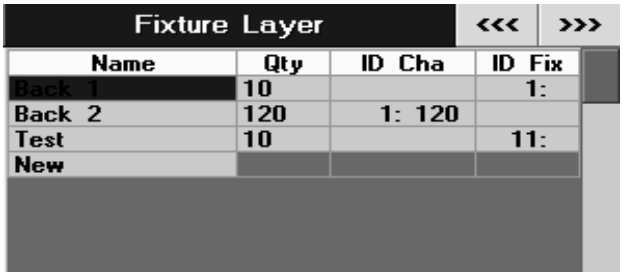
***The „ALIGN" function could be of great service here.***

## 2.2.4 Adjusting the Fixture Layer

Fixture Layer must be active: By shortly clicking on the title bar, it will be displayed in dark blue.

Choose a fixture group (layer).

Pressing one of the following buttons will lead to:



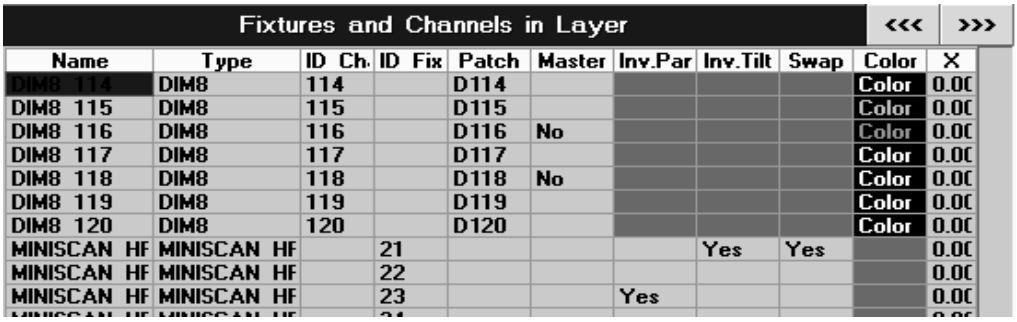

Add Line: A new group can be inserted in front of the selected group. Proceed like indicated 3 pages earlier: Creating groups with Scanners/Dimmers.

Delete Line: The selected group is deleted. All fixtures with all settings in this group are deleted.

Moves Lines: The selected group can be moved to another position in the table. If the “Moves Lines“ button was used, this will be displayed in red. By selecting a new position in the table, the group will be moved.

## 2.2.5 Adjusting individual fixture groups

Select a group in the “Fixture Layer“; this will now be displayed below:




### Adding identical fixtures

Select “New“ (dark blue) and shortly press the Encoder (right to the Display). The “Create New Fixtures or Channels“ window will open. In this window, all types of fixtures are displayed that are already present in this show. Select the type of fixture by turning the Encoder. Proceed like indicated, 3 pages earlier: Creating, patching and positioning groups with Scanners/Dimmers.

### Adding new fixtures

Select “New“ (dark blue) and shortly press the Encoder (right to the Display).

The “Create New Fixtures or Channels“ window will open.

Now, choose “From Library“. Proceed as indicated 3 pages earlier: Creating, patching and positioning groups with Scanners/Dimmers.

### Exchanging fixtures

Select the fixtures to be exchanged in the “Type“ column (dark blue). You can also select several or all fixtures.

Shortly press the Encoder (right to the Display). The “Choose Fixturetype“ window will open.

Select a fixture that was already present in the show by turning the Encoder, and accept it by shortly pressing on the Encoder. The fixture still has to be patched.

**or:**

Select “From Library“ for a new fixture, and shortly press on the Encoder. Proceed as indicated 3 pages earlier: Creating, patching and positioning groups with Scanners/Dimmers.

### Multipatch (Assigning multiple DMX channels for a fixture/dimmer)

For Multipatch, the selected fixture is ‘cloned’, so to say.

Select a fixture, for which multiple DMX addresses are to be assigned. Press the “Create Multipatch“ key. In the opened dialog window, enter the number of additional addresses and confirm with Enter. In the fixtures list, the clones are displayed below the specific fixture. Now, you have to enter a DMX address for each clone. And you can position the fixtures, to use them in the Stage window or on the ***grandMA*** 3D.

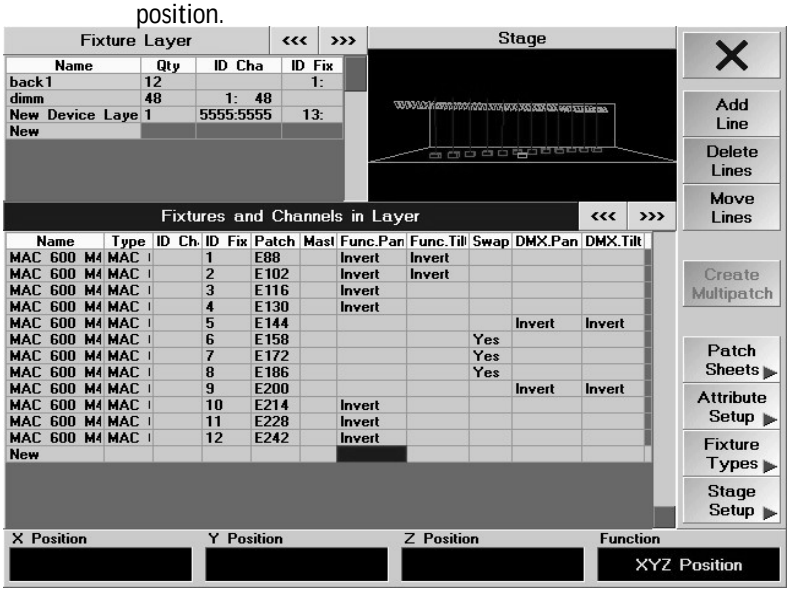
### Inserting, deleting or moving fixtures

Select a fixture. Pressing one of the buttons will have the following effects:

Add Line: Inserts a new fixture in front of the selected fixture.

Delete Line: Deletes the selected fixture. And all settings for this fixtures are deleted, too..

Moves Lines: Moves the selected fixtures to another position in the table. If using the “Moves Lines“ key, this key will be displayed in red. By selecting a new position in the table, the fixture will be moved to that new position.




### Assigning fixture names

Click on the fixture’s name, enter a name directly, and confirm with Enter. ***If a space and a number is added an automaticly enumerate of the names is made.***

### Adjusting ID Cha and Fix

Select one or more cells under ID Cha or Fix and press the Encoder. A window will open, in which you can enter the IDs that will then be accepted, when Enter is pressed. Pressing “None“ will delete them. ***Please avoid any overlappings.***

### Switching the Master (GRANDMASTER FADER) off:

Select one or more cells under Master and press the Encoder. Now, select “No“ and press the Encoder one more time. If GRANDMASTER FADER is switched off, this will be indicated by a “No“ in the respective cell.

### Func PAN / Func TILT

Select one or more cells under “Func.. Pan“ or “Func. Tilt“ and press the Encoder. Now, select “Invert“ and press the Encoder one more time. If a function is inverted, this will be indicated by a “Invert“ in in the respective cell.

### DMX Pan / DMX Tilt

Here you can invert the DMX - signals for Pan and Tilt functions - the signals are only inverted in the DMX -Output, not for the visualizer; this means, that movements in the visualizer and on stange will differ.
Select one or more cells under “DMX.. Pan“ or “DMX. Tilt“ and press the Encoder. Now, select “Invert“ and press the Encoder one more time. If a function is inverted, this will be indicated by a “Invert“ in in the respective cell.

### Changing from PAN to TILT and vice versa

Select one or more cells under “Swap“ and press the Encoder. Now, select “Yes“ and press the Encoder one more time. If PAN and TILT are changed, this will be indicated by a “Yes“ in in the respective cell.

**TIP** This is where the useful „PAN/TILT trackball orientation“ can be set.
This can only be done in the Live Access menu.
Check it out! Select a fixture, press HIGHLIGHT and let the Trackball „run“. Modifications will only be available after they have been saved. In cases like these, the HIGHLIGHT key, among others, is very useful.

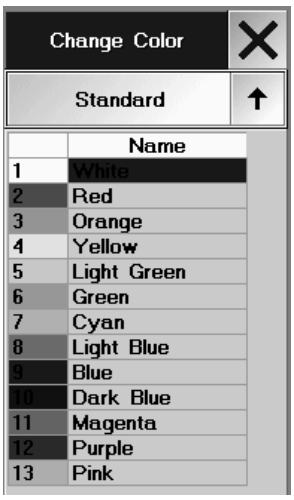
### Assigning colors for Dimmer channels

In the STAGE window or for the ***grandMA*** 3D, this is where colors can be assigned for the individual Dimmer channels (color filter foils).

Select one or more cells under “Color“ and press the Encoder.

The Change Color menu will open.

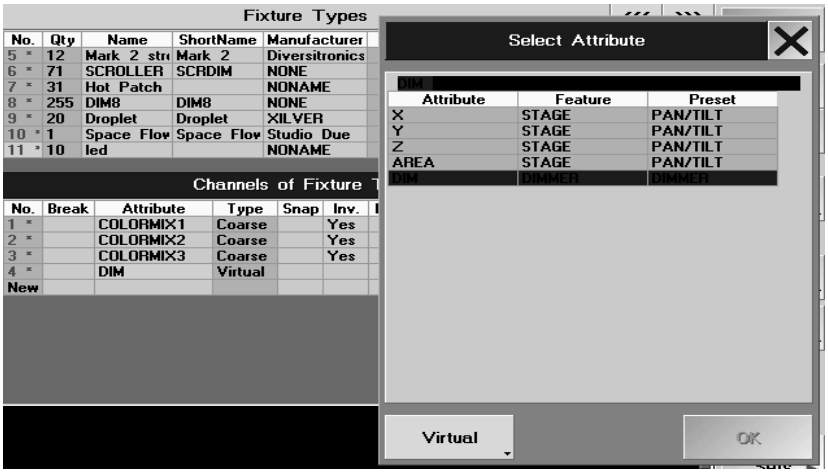
In this menu, you can choose between different color tables (Lee, Rosco, etc.). Above each color, the currently selected color table is displayed (here “Standard“). By shortly pressing the key, you can switch to another color table. Pressing the arrow will open a menu, in which all tables are displayed and can be selected directly.
Having decided for an individual table, you can choose a color using the Encoder and accept it by pressing the Encoder once. If a color has been assigned, this will be displayed in the respective cell.




## RGB-Lamps and LED-Beamer without dimmer

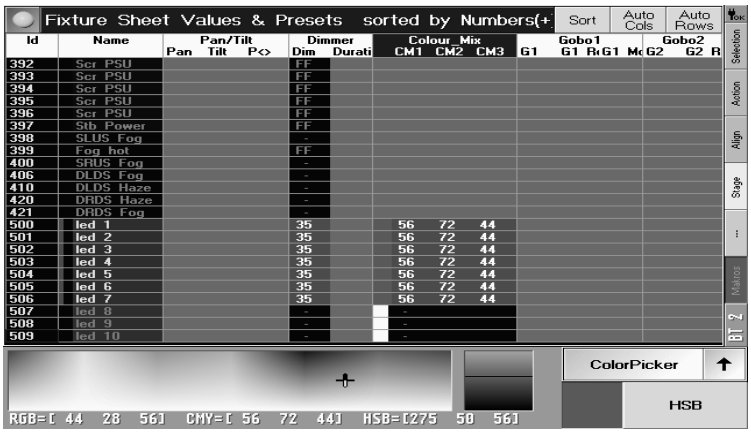
For this types of lamps grandMA can create an virtual dimmer.This means, that the software simulates the dimmer function.The user only has to choose this function and can operate these lamps as any other dimmer-type lamp.

In FULL ACCESS die Lampe anmelden ➠ **2.2**



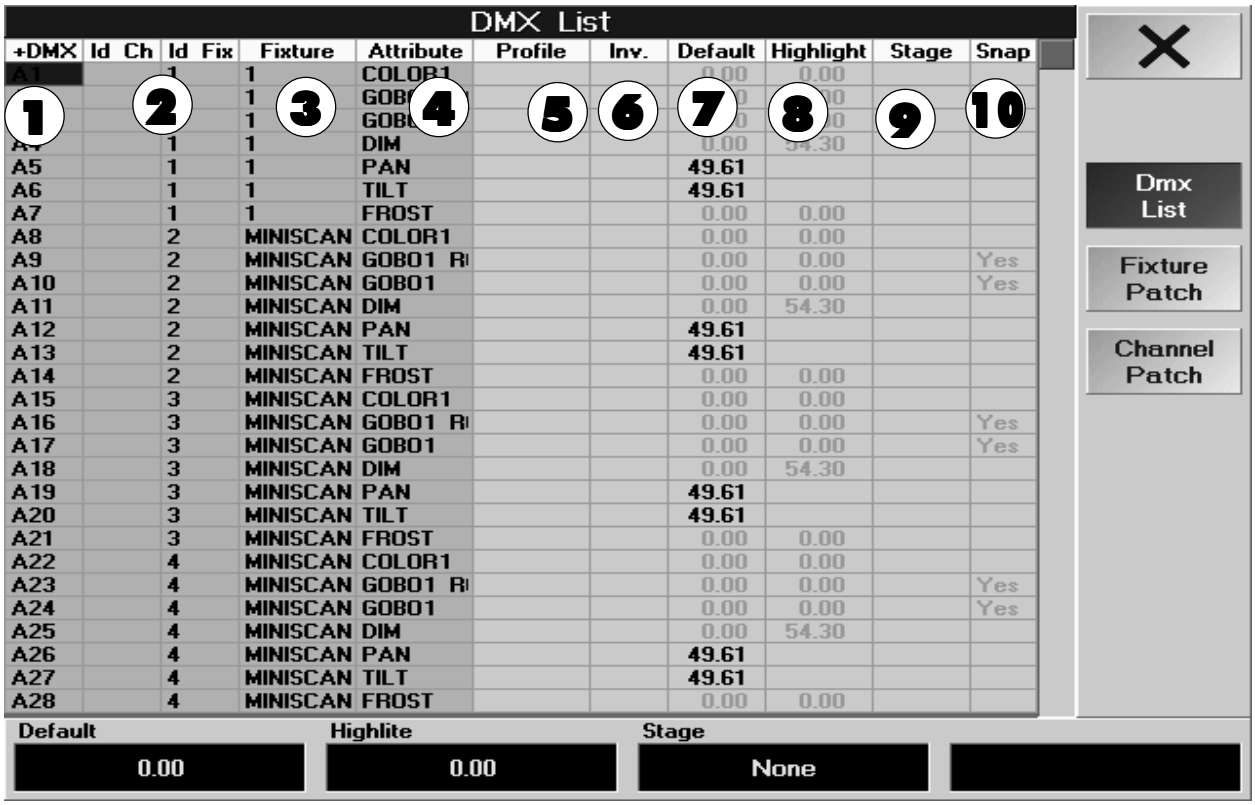

If no lamp of this type is in the library, create your own lamp ➠ ***2.2.1***
In CHANNELS of FIXTURE TYPES create 3 channels with attribut COLORMIX and switch the column INV to YES. Create another channel with attribute DIM and select Virtual in the SELECT ATRIBUTE menu. Confirm with OK.

In the Fixture Sheet the dimmer channel and the 3 colour channels are displayed and can be operated, although only 3 DMX-channels are covered; the virtual dimmer channel does not cover an own physical channel.



## 2.3 DMX List -Single Channel-specific Adjustments for the Current Show

Press the LIST key in the Full or Live Access menu to activate this menu.



This menu will only display the actually patched channels. All changes made **here** will **only** affect the **current show**!

**1** This column will show the **individual**, addressed DMX channel.

**2** Will show the ID for Channel and Fixture.

**3** The name of fixtures and dimmer channels assigned to the individual DMX channels.

**4** The functions of the individual DMX channels.

**5** In this column, a profile can be assigned to this channel. ➠ **2.8** Creating, Assigning and Deleting Profiles

Using these profiles, you can also define min. and max. values.

**6** Within this column, the respective DMX channel can be inverted. A click into the cell will activate this function. Press the Encoder (right to the Display). Select Yes for „Inverted“, No for „not inverted“ or Original (Library setting will be used) and accept them by pressing the Encoder one more time. An inverted channel will be indicated by a YES in the respective cell. These inverted channels are not used for the visualizer; this means, that movements in the visualizer and on stange will differ.

**7** DEFAULT: This value will be output if no CUE, Sequence, Preset or Direct Access addresses the fixture or dimmer channel.

This setting can be used for PAN/TILT so that a moving light can start being manipulated from a sensible and optimum position. You can change values by selecting the cell and adjust it by using the right Encoder (below the Display). These values can be set by selecting the respective cell with a click.

**8** The HIGHLIGHT function is used to temporarly override a fixtures current settings making it easier to see on stage and speed up the procedure of programming positions of the selected fixtures. The HIGHLIGHT values for individual DMX channels can be set by selecting the respective cell with a click. A value can then be entered within the activated window. You can adjust the value by using the second Encoder (below the Display).

**9** STAGE (not yet available in version 4.0)

**10** SNAP: New values for this channel will ignore cue timing and will execute in 0 seconds. Activate by a click on the cell. Press the Encoder (right of the Display). Select Yes for SNAP or No for FADE and accept by pressing the Encoder one more time. A YES in the respective cell will indicate that SNAP has been chosen for this channel.

The default for all DMX channels is to follow cue timing.

FADE: A value can be changed slowly (channel can fade).

This is only a pre-setting for each individual channel and can easily be changed during programming, if needed.

## Button functions:

By pressing the button

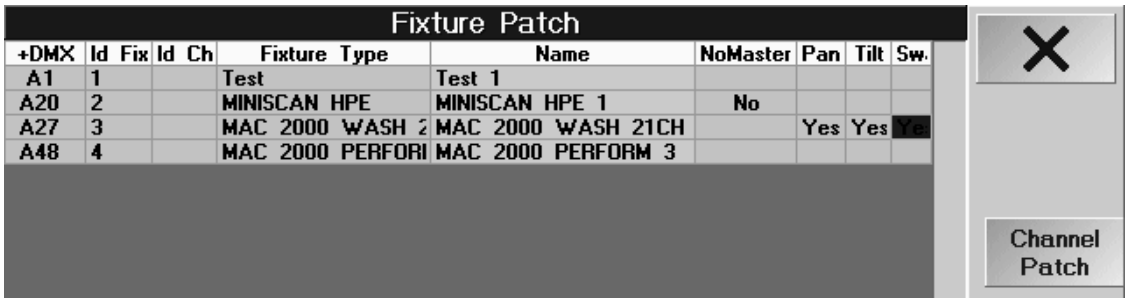
Fixture Patch you enter the Fixture Patch menu.

Channel Patch you enter the Channel Patch menu.

**X**: you can leave this menu. The settings will only be executed and saved after leaving the Full Access menu and pressing the SAVE button.

## Fixture or Channel Patch menu

In both of these menus you can patch fixtures. And you can define standard settings for each fixture.

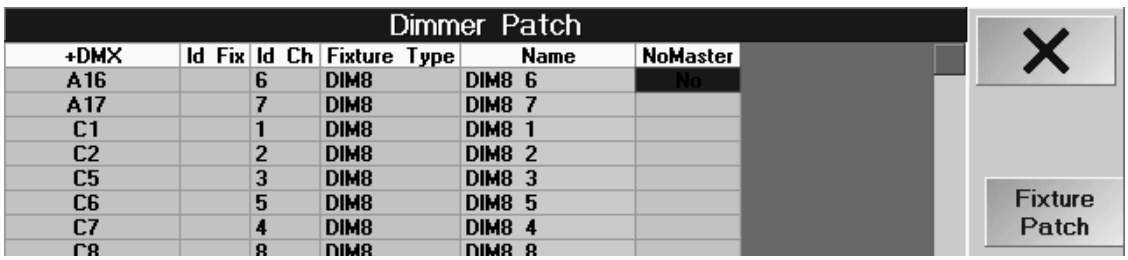



## Listing of individual functions

DMX: Shows the patched channel. If this is to be adjusted, click into the cell and rotate the Display Encoder. The Fixtures to Patch menu will open. ➠ **2.2.2** Patching Scanners/Dimmers

NoMaster: If a cell contains a No here, the function of the Grandmaster-Faders is not active for this fixture. ➠ **2.2.5** Switching the Master (GRANDMASTER FADER) off (one page earlier).

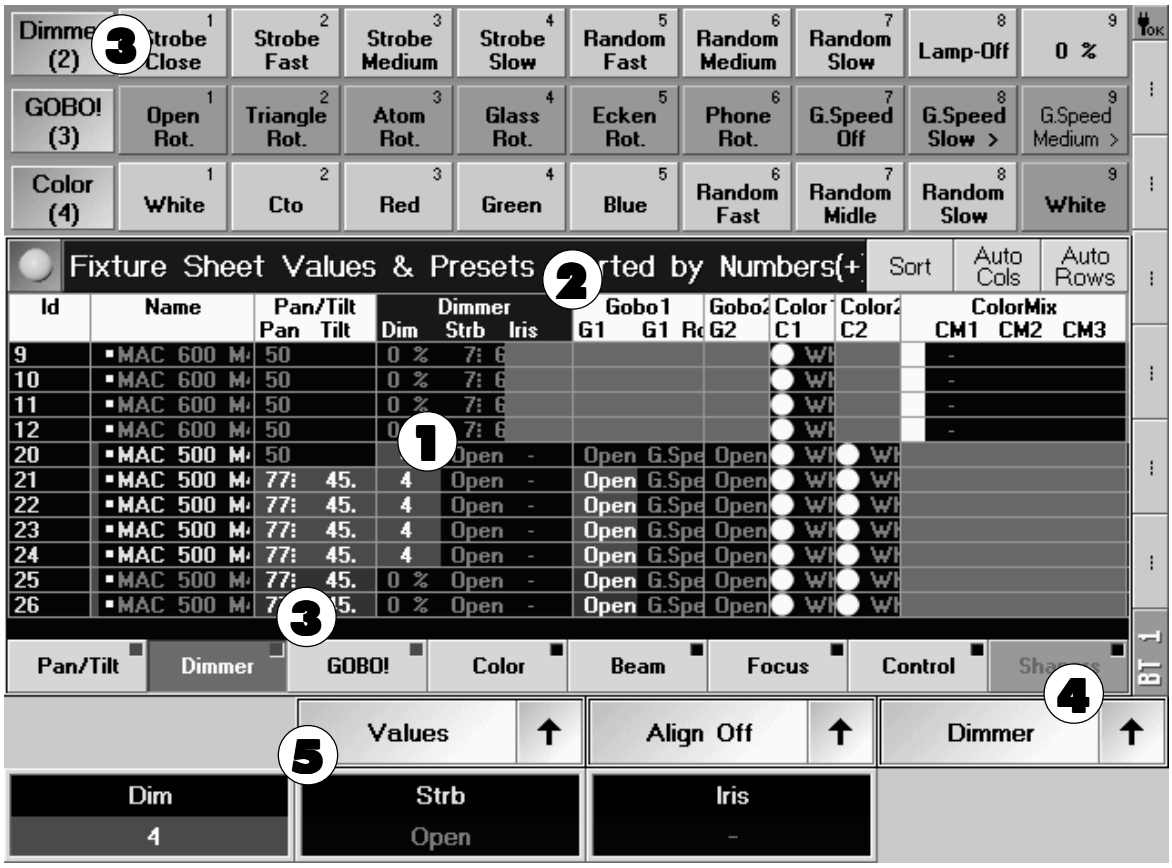
Pan/Tilt/Swap: If a cell contains a Yes here, the function will be inverted or completely exchanged. ➠ **2.2.5** Inverting or changing PAN or TILT, (2 pages earlier).



## 2.4 Adjustments in the ATTRIBUTE SETUP menu

***Introduction***

In the „Attribute Setup" menu, you can change the names of Preset and Features Groups. Furthermore, you can create or adapt new Features Groups. Furthermore, you can define, which attributes will be activated together or individually.




But first a short explanation about the differences between Presets, Features and Attributes:

**1** **Attribute:** Attributes are individual functions of Fixtures like Gobo1, Focus, Iris, Pan, Tilt ...

**2** **Feature:** Features are groups, in which several Attributes are combined. In the Fixture Sheet, the first line will display all Features available. Below the individual Features, the respective Attributes are displayed.

**3** **Presets:** In a preset, the value of one or more Attributes can be stored. Presets are divided in different Preset Groups (Gobo, Colour, ...).
Features are allocated to the individual Preset Groups.

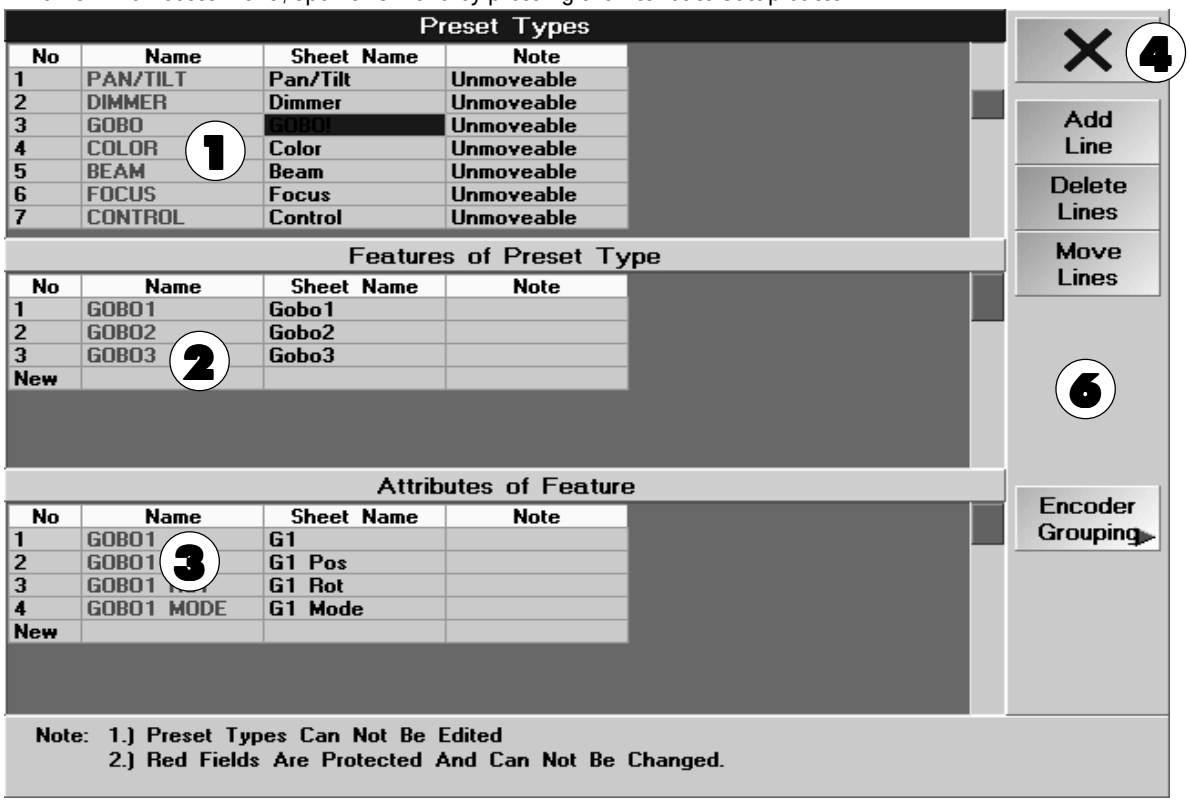
**4** By pressing a FEATURE key with the function (in this case, Dimmer), you can select the different Feature Groups for the Preset Group selected to change the individual Attributes using the Encoder.

**5** Here, the individual Attributes are displayed that can be changed with the respective Encoder.

## 2.4.1 Preset, Feature and Attribute Setup

**Attention! This menu is important and can influence all of your programming!**

In Full or Live Access menu, open this menu by pressing the Attribute Setup button.




The number of Preset groups is fix and cannot be modified. Furthermore, the names displayed in ***red*** can't either be changed or deleted.

### Changing the names of Preset groups, Features and Attributes

Click on a name, change it using the keyboard, and confirm with Enter. The modifications will only be executed and saved after leaving the Full or Live Access menu and pressing the SAVE button.

The new name will now be displayed in the respective Preset window or in the Fixture window.

### Creating an additional Feature in a Preset group

When creating new scanners or adjusting of present ones, you possibly need additional Features and Attributes.

**1** Select a Preset group.

**2** Click into the empty cell below the present Features. Enter a name for the new Feature using the keyboard (e.g.: Gobo 4) and confirm with Enter. The same name is automatically taken over and will be displayed in the Fixture window on the right side. If you want to use a different name, change it as indicated further above.

**3** Now, you still have to create Attributes for this Feature.
Click into the first cell below the name. Enter a name using the keyboard (e.g.: Gobo 4) and confirm with Enter. The same name is automatically taken over and will be displayed in the Fixture window on the right side. If you want to use a different name, change it as indicated further above. To create further Attributes, go to the next free cell and proceed as you did for the first Attribute.

### Adding additional Attributes to a Feature

Select a Preset group and then an Feature.

**3** Click into the free cell below the available Attributes. Enter a name for the new Attribute using the keyboard (e.g.: Gobo 4) and confirm with Enter. The same name is automatically taken over and will be displayed in the Fixture window on the right side. If you want to use a different name, change it as indicated further above.

## Inserting, deleting or moving Features or Attributes

Select a Feature or Attribute (blue background). Pressing the buttons below will have the indicated results:

Add Line will add a new Feature or Attribute in front of the selected one.

Delete Line will delete the selected Feature or Attribute. Only self-created Features or Attributes can be deleted.

Moves Lines will move the selected Feature or Attribute to another place in the table. The different ways to move Features or Attributes will be explained in the two following items.

### Moving a Feature to another Preset group

- Click on a Feature, e.g.: Gobo1.
- Press the Moves Lines button, will be displayed in red.
- Select a Preset group, to which the Feature is to be moved.
- Select the position in the Features table by clicking on it. The Feature will now be displayed in this Preset group.

Some Features cannot be moved (e.g.: Color Mix). This is indicated by the words “Fixed Attributes“ in the table on the right of the respective Feature.

The changes will take effect and wiil be saved only after leaving the Full or Live Access menu and pressing the SAVE button.

### Moving Attributes to another Feature or Preset group

- Click on an Attribute, e.g.: Shutter.
- Press the Moves Lines button, will be displayed in red.
- Select a Preset group, to which the Attribute is to be moved, e.g.: Control.
- Then, select a Feature, to which the Attribute is to be moved, e.g.: Control.
- Select the position in the Attributes table by clicking on it. In this Preset group, the Attribute will now be moved into this Feature .

Some Attributes cannot be moved (e.g.: Color Mix1). This is indicated by the word “Unmoveable“ in the table on the right of the respective Attribute.

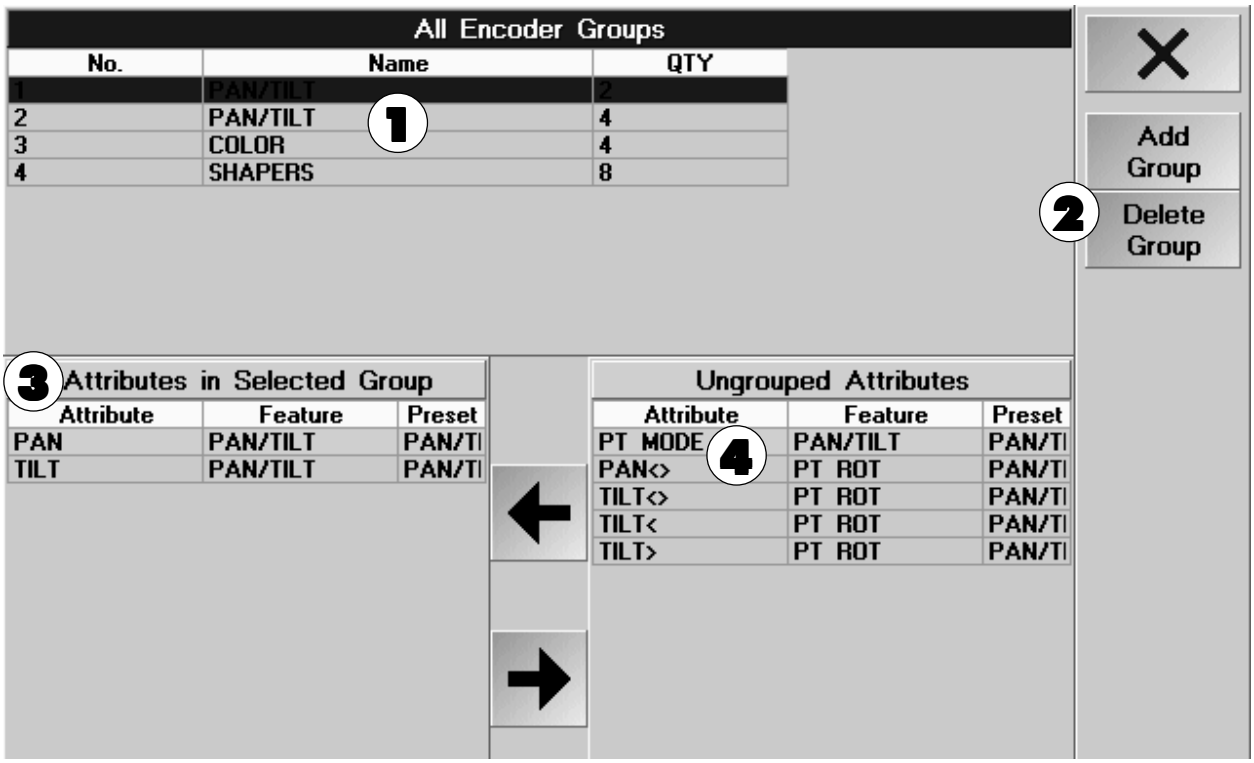
The changes will take effect and will be saved only after leaving the Full or Live Access menu and pressing the SAVE button.

## 2.4.2 Encoder (Activation) Grouping

All settings within this menu will affect the storing of Cues, Presets and creating of Presets (Create Preset menu).
Call up this menu by pressing the „Encoder (Attribute) Grouping" key in the Preset and Feature Assignment.

**Attention! This menu is important and can influence all of your programming!**

In the Attribute Setup menu (see 2 pages earlier), open this menu by pressing the Encoder Grouping button.




The Attributes combined in a group will be activated and stored when they are changed (e.g. Pan and Tilt).

**1** By selecting a group, the appropriate Attributes will be displayed in the table on the lower left side.

**2** Pressing the „Add Group" key will create a new group.
In order to delete a group, this group has to be selected first. Now, press the „Delete Group" key. The group will be deleted, the Attributes will automatically be added to the Free Attributes.

**3** In this column, the Attributes of the selected group will be displayed. By selecting an Attribute, this will be removed from this group and added to the Free Attributes.

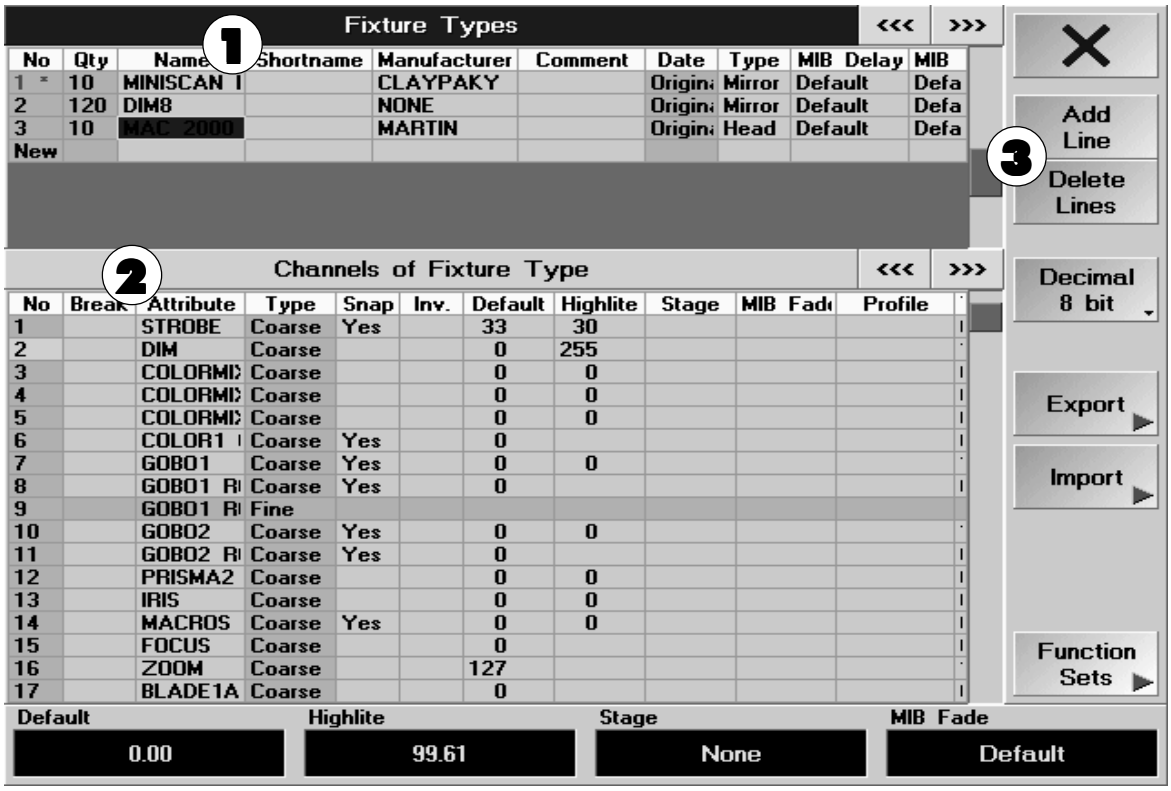
**4** In order to assign Free Attributes to another group, this group has to be selected first. Selecting the Attribute will add it to the currently selected group.

**5** By pressing the „Default" key, all groups except 3 will be deleted. Almost all Attributes will be displayed as Free Attributes in the right column. In the remaining 3 groups, the fixed Attributes (Pan/Tilt, Col.Mix1-4 and Blade1A-4B) are allocated. These Attributes can **not** be moved into other groups (indicated by "fix" next the Attribute's name).

The changes will take effect and will be saved only after leaving the Full or Live Access menu and pressing the SAVE button.

# 2.5 Modifying Scanners (FIXTURE TYPES)

In the Full Access menu, open this menu by pressing the ***Fixture Types*** button.




Make your entries or modifications as indicated ➠ **1.7.6** General Operation.

## Listing of the individual functions

**1** The upper part of the Display shows all fixtures that are currently used in the Show.

No: Numerical of the individual fixtures currently signed-on in this Show. If this number is displayed in red and with an asterisk, this fixture has been modified.

Qty: Number of fixtures of this type.

Name: Name of the fixture from the Library. By selecting it, you can change the name directly using the keyboard.

Shortname: Here, you can enter an abbreviation or short name.

Manufacturer: Manufacturer's name from the Library.

Comment: Enter a comment here.

Date: If you see "Original" here, this fixture is one from the MA Library. If a self-created fixture is used, you'll find the date off creation here.

Type: Toggle between mirror or moving head Fixture. When using moving head Fixtures, the FIXTURE SHEET will show a square left of the PAN value, indicating the current head position.

MIB DELAY: To set a DELAY time for the MOVE IN BLACK function for this fixture. If Default is displayed, the set value from the DEFAULT menu is used. ➠ **2.13** Settings in the DEFAULTS menu

MIB FADE: To set a FADE time for the MOVE IN BLACK function for this fixture. If Default is displayed, the set value from the DEFAULT menu is used. ➠ **2.13** Settings in the DEFAULTS menu

BeamAngle: Max. Beamwidth in degree (Zoom and Iris-function corresponds to this value).

Power: For the 3D view; see 3D instructions.

Lumen: For the 3D view; see 3D instructions.

Weight: For the 3D view; see 3D instructions.

**2** If you select a fixture, the individual functions of this fixture will be displayed in the lower part of the Displays.

| | |
|---|---|
| No: | Listing of the individual DMX channels. If a number is displayed in red and with an asterisk, this channel has been modified. |
| Break: | If one cell contains a "Yes", you can assign a different DMX address from the next channel onwards. To change the setting, select a cell and press the Encoder. Now, select „Yes" and press the Encoder one more time. |
| Attribute: | Listing of the individual functions. |
| Type: | „Coarse" stands for a coarse channel, and „Fine" for a fine channel. |
| Snap: | FADE/SNAP function for the respective channel. ➠**2.3** DMX List -Single Channel-specific Adjustments for the Current Show |
| Inv: | In this column, you can invert the respective channel. |
| Default: | This value is called up, if the Fixture or Channel is not controlled by CUE, Sequence, Preset or a direct access. Can be changed with the left Encoder. |
| Highlight: | This value is called up, if these fixtures are selected and the HIGHLIGHT key is pressed. Can be changed with the second Encoder. |
| Stage: | (No function assigned yet). |
| MIB Fade: | Allows you to set a FADE time for the MOVE IN BLACK function for this Fixture. Can be changed with the right Encoder. |
| Profile: | In this column, you can assign a profile to the channel. ➠ **2.8** Creating, assigning and deleting Profiles |
| Speed: | For the 3D view; see 3D instructions. |

**3** **Functions of the individual buttons:**

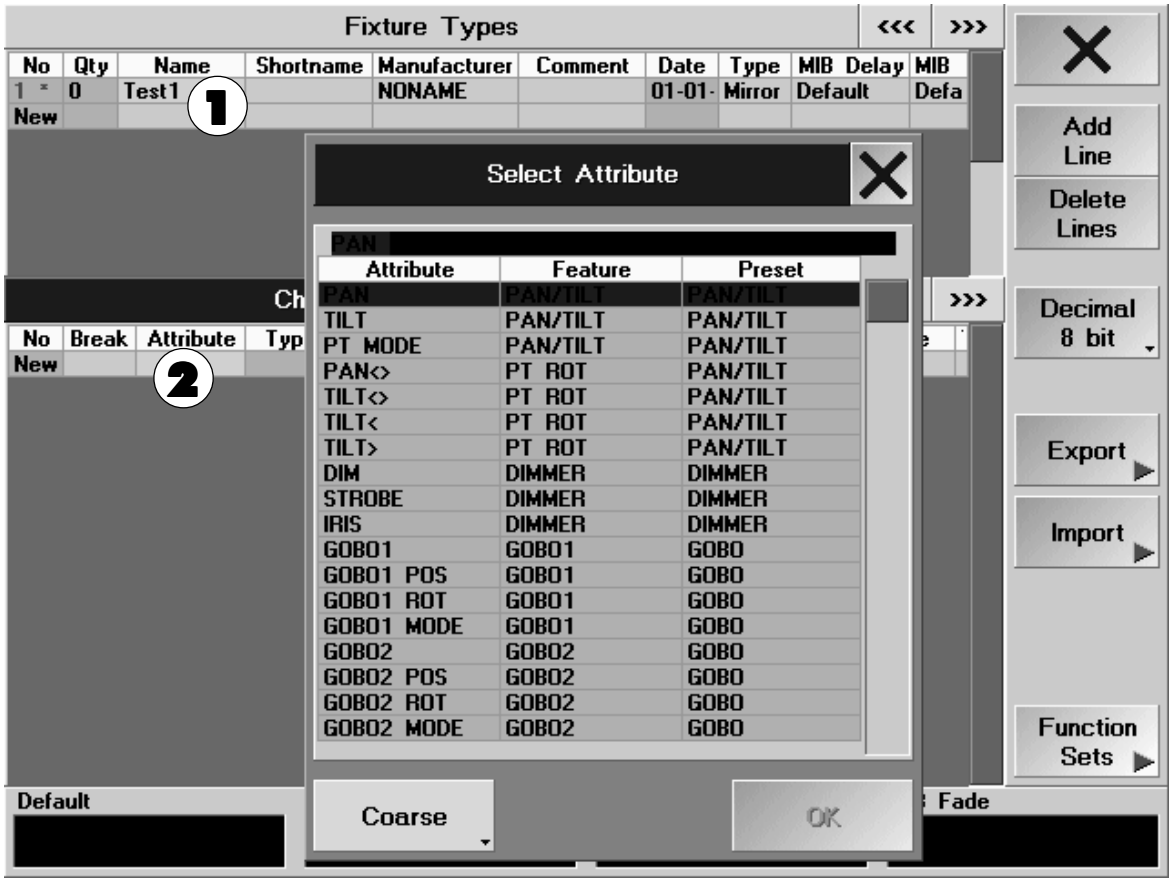
| | |
|---|---|
| Add Line: | To insert a new fixture or function above the selected line. |
| Delete Line: | To delete the selected fixture or function. |
| Decimal Values: | To display the table values as percentages. By pressing the button, you can switch between decimal and hexadecimal representation. |

## Updating the Fixtures Library

| | |
|---|---|
| Export to Library: | The selected fixture will be saved to disk in the Library. |
| Export to Floppy: | The selected fixtures will be saved to floppy. |
| Function Sets: | Changes into this menu. ➠ **2.7** Function Sets |
| Import: | You can insert a fixture from the Library or from a floppy. |
| Funcion Sets: | Here, you can enter and modify value-depending names and values for the visualization and representation in the Fixture Sheet. Furthermore, you can define how Presets are automatically created ➠**2.7** Function Sets - Names (Channel Values) and Presets |
| **X**: | With this, you can leave this menu. The settings will only take effect and be saved after leaving the Full Access menu and after pressing the SAVE button. |

## 2.6 FIXTURES TYPES (create new)

In the Full Access menu, open this menu by pressing the Fixture Types button.




Make your entries or modifications as indicated ➠ **1.7.6** General Operation.

**1** All fixtures that are currently used in the Show will be displayed in the upper part of the Displays.

**Description of all functions ➠ 2.5** FIXTURE TYPES, 2 pages earlier.

In the New column, click on the Name cell and enter a name for the new fixture and confirm with Enter. A new fixture is created and the basic settings are set to "Default". These settings still have to be adjusted.

Please make sure that the chosen name does **not** already exist, because otherwise two with the same name can later only be recognised by their manufacturer or the date.

- Now, you can enter a name for Shortname, Manufacturer and, if needed, a comment.
- Type stands on Mirror and can be switched to Head by selecting the cell using the Encoders (to the right of the Display).
- Adjust the values for MIB Delay and MIB Fade, if needed.
- The settings for P Offset, T Offset, BeamAngle, Power, Lumen and Weight will only be needed for the visualization in the Stage window or on the ***grandMA*** 3D and can be adjusted, if need be.

**2** In the New column, click on the Attribute cell and open the Select Attribute window by pressing on the Encoder (right to the Display).

Now, select the function for the first channel and accept it by pressing the Encoder one more time. Automatically, the next line will be selected.

The DUMMY Function is meant for fixed channels. The output value for this channel has to be set in the DEFAULT column. This channel can not be modified in the FIXTURE-SHEET.

If you finished selecting all Scanner functions, you can proceed with the presets.
Presets are:

- Type
- Snap
- Inv
- Default (can be adjusted with the left Encoder)
- Highlight (can be adjusted with the second Encoder)
- Stage (presently without any function)
- MIB FADE (can be adjusted with the right Encoder)
- Profil
- Speed

➠ **2.5** Listing of the individual functions in the EDIT FIXTURE menu

The values are displayed as percentages and can be switched to decimal or hexadecimal by pressing the Percent button.

For the individual functions (e.g. GOBO), so-called Channel Values can be created. These will then be displayed in the Fixture Sheet. You can switch to the menu by using the Function Sets button. ➠ **2.7** Function Sets, next page.

You can leave this menu by using the **X** button. You could now use the created fixture in this Show.

The settings will only take effect and be saved after leaving the Full Access menu and pressing the SAVE button.

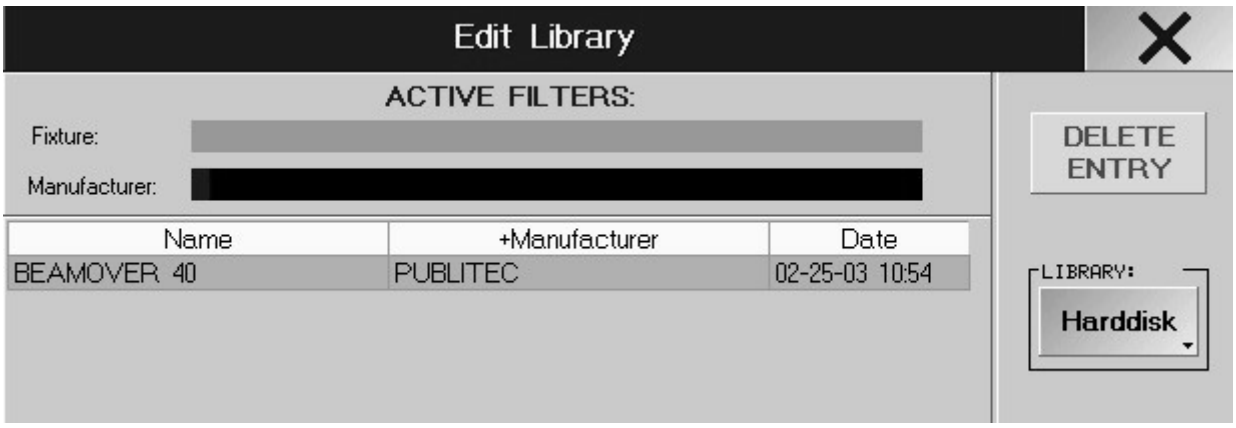
**Momentarily, the created fixture can only be used for *this* Show.**

If you want to have this fixture available in the general Library (on harddisk or floppy), too, you have to UPDATE them (save to disk or floppy).
➠ **2.5** Updating the Scanner Library (USER-Library)

### *Delete self created fixtures*

In the ***Tools***-menu you can delete (permanent) self created or varied fixtures from the library. You can not delete fixtures from factory desk library.

- In the menu ***Tools*** press the button ***Manage Fixture Library***
- Select the fixture and press ***Delete Entry***
- With the filters you can display fixtures of the desired manufacturer or names
- With ***Harddisk/Floppy*** choose store medium, mostly its ***Harddisk.***



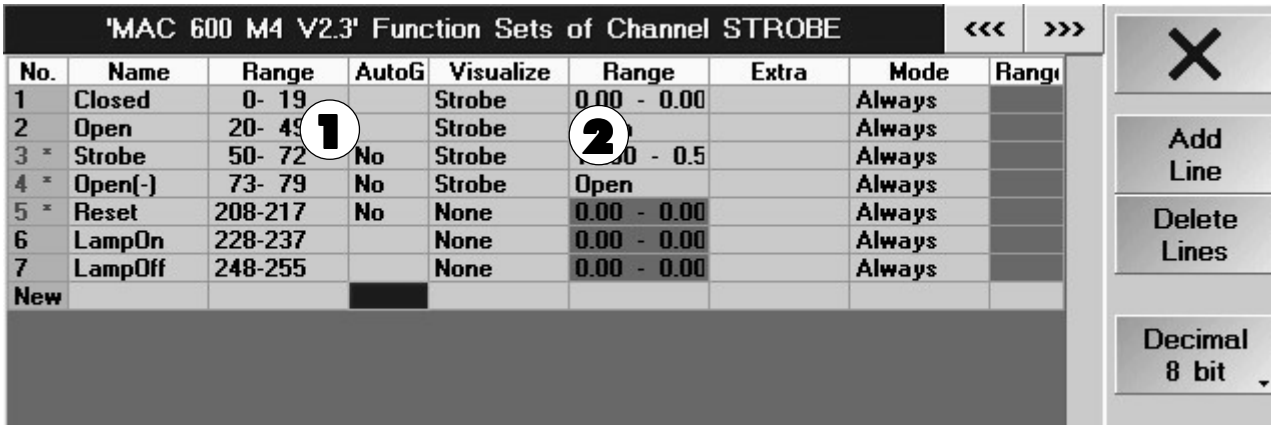
## 2.7 Function Sets - Names (Channel Values) and Presets

In this menu, you can create or adjust so-called Channel Values (names) for the individual functions (e.g. GOBO). These names will then be displayed in the Fixture Sheet instead of the number value. Furthermore, you can assign different graphic parameters like e.g. colors or Gobos that will then additionally be displayed in the Fixture Sheet. These data will also be needed for the visualization on the ***grandMA*** 3D.

These names and values are used when creating Presets in the Auto Create menu (➠ **2.12.1** Auto Create - Creating Presets, Effects and Group buttons automatically).

***!*** Presets will **not** be created automatically, if for the Ranges of Names (1) **and** Visualize (2) values from "X" up to "Y" are indicated (e.g.: 10-21)***!*** Otherwise, always. - see column AutoGen.

Open this menu by pressing the Function Sets button in the Fixture Types menu (see 2 pages earlier).



Make your entries or modifications as indicated ➠ **1.7.6** General Operation.

### Listing of the individual columns and their functions

No: Listing of the created names and appropriate values. If a number is displayed in red and with an asterisk, this line has been modified.

Name: This name will only be displayed, if the value indicated for Range is reached. There are exceptions that will be explained on the next page. You can select individual names using the left Encoder.

Range (Name): For these values, the names (Channel Values) will be displayed. The Start and End Ranges can be adjusted using the two Encoders in the middle.

AutoGen. By choosing a cell and pressing the Encoder „No" will be indicated, this means, that the presets will be not automatically generated.

Visualize: Here, you can define what else is to be displayed in the Fixture, Stage-Sheet or ***grandMA*** 3D. You can visualise either graphics (for Gobos) and colors or data plus units (e.g.: degrees for PAN/TILT or RPM for Gobo rotation).

Range (Visu.): These values will be displayed to indicate units (e.g.: with PAN/TILT degrees); e.g. Gobo rotation: for a value of 1 - 20, 1 RPM -20 RPM will be displayed (Discrete values).

For the functions PAN and TILT the maximal deflection is here setted; important for Flip functions and ***grandMA*** 3D views. E.g.: Pan -90 - 270 corresponds a maximal deflection of 360 degrees whereas the middle is at 0 degrees (asymetric deflection). For Zoom and Iris the value-range between 0 and 1.

Extra: With this, you can define, what Gobos or colors will be displayed.

Mode: Here, you can set an additional condition for displaying the name.
With "Always", you do not set a condition, and the name will always be displayed.

If, however, a function (Attribute) is selected and a Range set, this name will only be displayed, if the value (of the Range) of this function has been set (condition).

Range (Mode): Value for the indicated function (mode).

## Functions of the individual buttons:

By pressing the button

| | |
|---|---|
| Add Line | you can insert a new name above the selected line. |
| Delete Line | you can delete the selected name, i.e. the complete line. |
| Percent Values | you can display the table values as percentages. By pressing the button, you can switch to decimal or hexadecimal display. |
| **X** | to leave this menu. The settings will only take effect and be saved after leaving the Full Access menu and pressing the SAVE button. |

## Entering Names and Values

The Attribute, for which names and values can be entered, is displayed in the title bar **or** above the right Encoder below the Display. To select another one, rotate the Encoder, until the desired Attribute is displayed.

The first column contains the name (for Color e.g.: Color1). Click on this name and change it, if needed (e.g.: Close, Red, ...).

In the Range column, 0.00% - 100.00% is displayed. Using the second and third Encoder, you can enter the starting and end values for this name (Channel Values). By pressing the Percent Values buttons, you can switch to decimal or hexadecimal display.

For further names and values, repeat these two steps, using the next lines, respectively.

## Examples:

Here are some examples for standard functions (e.g.: Dimmer, ...), variable functions (e.g.: Strobe, Pan, Rotation, ...) and functions with fix values (Gobo, Colors, ...). You can sign-on different fixtures for a trial, of course, or have a look at the given names and settings and use them for your own fixtures.

**Standard function:** Closed will be displayed, if the set value is „O“. Open, if on 255. Between 1- and 254, only the value will be displayed.

**Variable function:** ***(Discrete Values)*** The set value will be displayed. Furthermore, a value indication will be

'MAC 2000 WASH 21CH' Function Sets of Channel DIM <<<

| No | Name | Range | Visualize | Range | Extra | Mode | Range |
|---|---|---|---|---|---|---|---|
| 1 | Closed | 0- 0 | Dimmer | | | Always | |
| 2 | Open | 255-255 | Dimmer | | | Always | |
| New | | | | | | | |

displayed together with „Degrees“ as unit. In this case, -270° to 270° would be displayed. For Strobe, “Hz“ and for Gobo_Rotate “RPM“ would appear here.

'MAC 2000 WASH 21CH' Function Sets of Channel PAN <<< >>>

| No | Name | Range | Visualize | Range | Extra | Mode | Range |
|---|---|---|---|---|---|---|---|
| 1 | PAN | 0-255 | Pan | -270.00 - 270.00 | | Always | |
| New | | | | | | | |

**Fixed values:** Open will be displayed, if the set value is „O“.
Red between „8“ and „24“ and additionally a color will be displayed on the side. This color can be set in the Extra column. Sames applies for the other colors.
Between the given values (e.g.: here 1 - 7), the color would be displaced by Open, and the color be inserted for Red. Only after reaching the value “8“ would the color be displayed completely for Red.

'MINISCAN HPE' Function Sets of Channel COLOR1 <<<

| No | Name | Range | Visualize | Range | Extra | Mode | Range |
|---|---|---|---|---|---|---|---|
| 1 | Open | 0- 0 | Color | | Color | Always | |
| 2 * | Red | 8- 24 | Color | | Color | Always | |
| 3 * | Yellow | 25- 41 | Color | | Color | Always | |
| 4 * | Violet | 42- 58 | Color | | Color | Always | |

# 2.8 Creating, Assigning and Deleting Profiles

In the PROFILE TOOL menu, you can create individual profiles. The profiles created can be assigned to any Fixture parameter or dimmer channel.

## Assigning a profile to a DMX channel

Open the FIXTURE TYPES menu ➠ **2.5** Modifying scanners (EDIT FIXTURE) or **2.6** Creating Scanners (EDIT FIXTURE). Here, you can assign a profile to **all** fixtures of one type **simultaneously**.

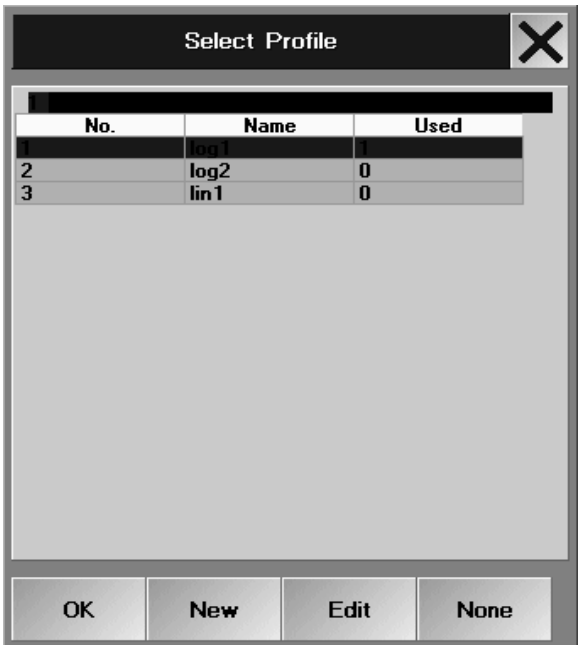
**Or:**

Open the Patch Sheets menu ➠ **2.3** DMX List -Single Channel-specific Adjustments for the Current Show. Here, you can assign a profile to each individual DMX channel.

In the Profile column, elect the cell for the fixture or DMX channel, and press the Encoder. The Select Profile menu will open.

The table shows all created profiles.

By selecting a profile, it will be activated and the menu be closed. The name of the selected profile will now be displayed in the cell.



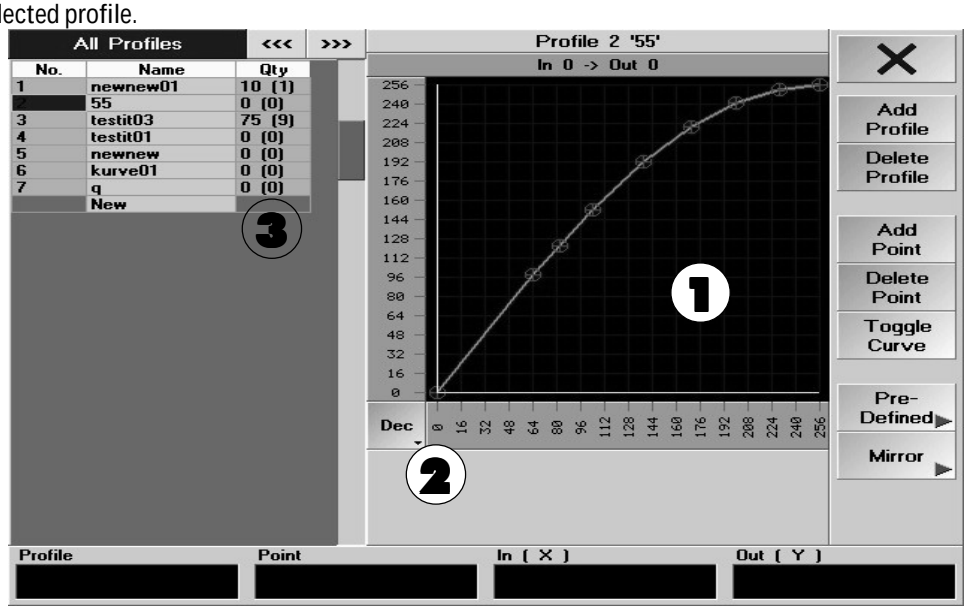

## Un-assigning a Profile

Select the name of the assigned profile and press the **None** button. This will revoke the assignment.

## 2.8.1 EDIT PROFILES - Creating or modifying profiles

If you want to create a new profile, press the **NEW** button. The EDIT PROFILES menu will open. Additionally, a window will open, where you can enter a name for the profile and have to confirm it with Enter.

To change a profile, select it using the Encoder and press the **Edit** button. The EDIT PROFILES menu will open with the selected profile.




**1** At first, when creating a new profile, a lineary profile is displayed that can then be modified. If an existing profile is selected, this will now be displayed.

**2** The y-axis gives the value set on the ***grandMA***, whereas the x-axis gives the DMX value that will be output. By pressing the PERCENT key, you can switch the scaling from percent to decimal or, when pressing the key once more, to hexadecimal.

- Clicking on a desired point in the diagram will bring up cross-wires. Above the diagram, the value of the current position is displayed. The value after IN is the set value on the ***grandMA***, the one after OUT is the DMX value that will be put out.
- Press the **Add Point** button. The profile line will automatically be connected with the new point. This way, you can set as many points as you wish.
- To **delete** a point, select one and press the **Delete Point** button.
- Pressing the **Toggle Curve** button will create a wave form.
- The button ***PREDEFINED*** opens a menue with predefined profiles, these profiles can altered and stored with a new name.
- The button ***MIRROR*** displays a selection to mirror the profile.

Using the **mouse**, you can move points. Make a left mouse click on the point, draw it to the desired position and let the button go.

The modifications made will be saved to this profile directly.

The table will show all existing profiles that can also be accessed and modified directly.

To create an additional profile, press the **Add Profile** button, name it and repeat the steps above.

To delete a profile in the table, select it and press the **Delete Profile** button. Deleting a profile is only possible when the profile is already deleted from the fixture (in ***Full Access*** / ***Fixture Types*** / ***Profiles***)

Pressing the **X** button will save the profiles and you leave the menu.

**3**

Qty: Numbers of cordinations are displayed

100 : Number of fixtures, this profile is coordinated.

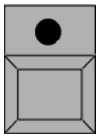
(1): Number of channels per fixture, this profile is coordinated.

## 2.9 DMX Output and Ethernet Configuration

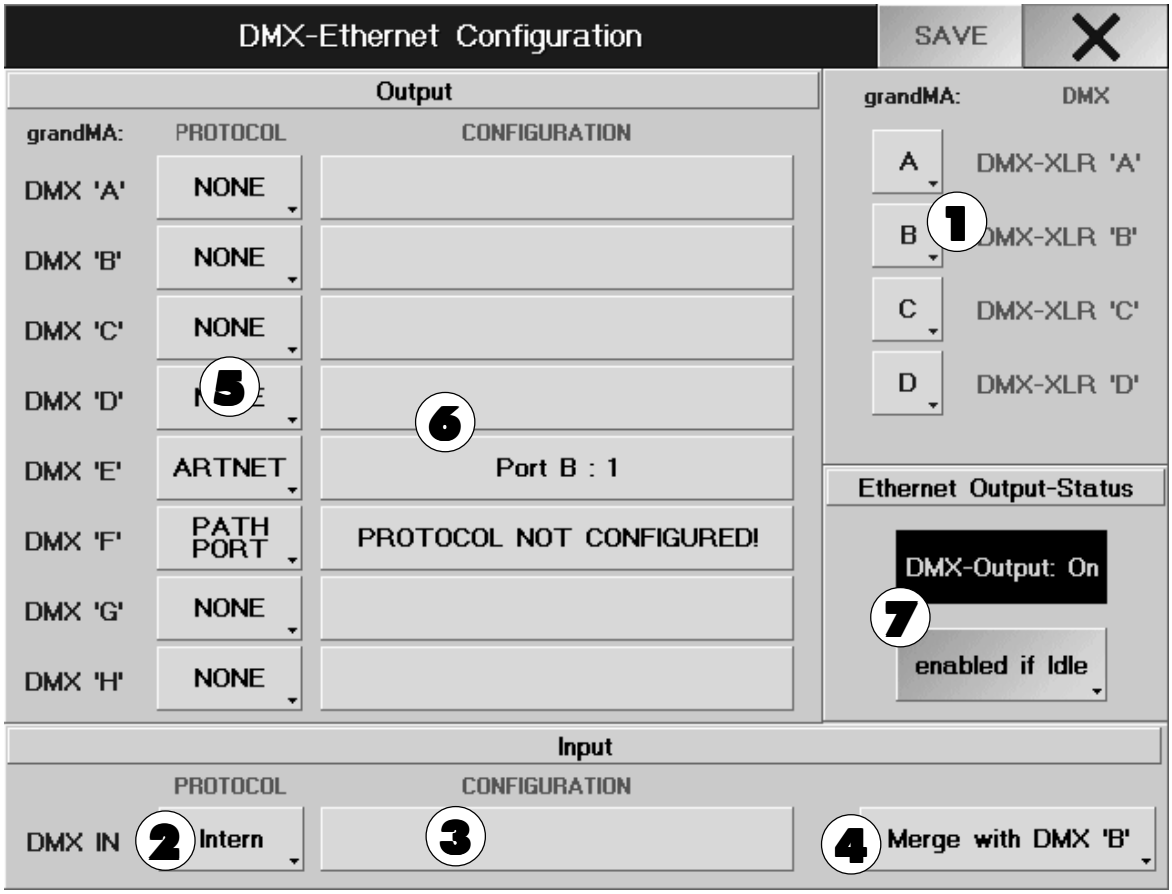
There are 4 DMX output sockets on the rear of the ***grandMA***. These sockets can be assigned to any of the DMX universes A to H. It is also possible to output the same universe on more than one output socket.
By using Ethernet data transmission more DMX outputs can be assigned.

DMX universes E to H are only available with the optional channel expansion upgrade to 4096 channels. As of serial number 156, a dongle (hardware protection) has to be installed within the ***grandMA***; for serial numbers under SN 156, a plug-in card has to be exchanged. **For this operation, the unit can only be opened by a qualified technician. CAUTION: disconnect the mains power first!**

**TOOLS** Press the TOOLS key once.



Call up this menu from the TOOLS menu using the DMX-OUTPUT CONFIGURATION key.




### 2.9.1 Assigning the DMX-XLR sockets of the *grandMA*

**DMX outputs A to D** (on the backside of the console)

**1** In this column, the DMX ports can be assigned to the respective output sockets on the ***grandMA***.

By repeated pressing these keys any of the DMX Universes, A to H, can be assigned to any of the ***grandMA***´s DMX output sockets A to D. The assigning of DMX ports to the sockets is instantaneous.

## DMX input

**2** In this area, you can assign the DMX-XLR input to an internal DMX port (A-H), or you can assign the DMX-In of an external Ethernet DMX unit to an internal DMX port.

By pressing the button below PROTOCOL, you can set the following:

Intern: The DMX-IN (on the backside of the console) will be used.

ARTNET: The assigned DMX-In of an ARTNET unit will be used. Assignment see ➠ **2.9.3** ARTNET DMX-ETHERNET CONFIGURATION, next page.

PORTALL: Not verified in this software version (4.0).

PATH PORT: The assigned DMX-In of a PATH PORT unit will be used. Assignment see ➠ **2.9.4** PATH POT DMX-ETHERNET CONFIGURATION, next pages.

**3** By pressing the button below Configuration, you can open the appropriate menu. ➠ below or on the next page

## DMX Merge

**4** By pressing the "Merge with" button you can define, on which internal DMX port (A to H) the DMX-IN signal will be merged with.

DMX IN can be used to merge the signals of a second console with those of the ***grandMAs*** (MERGE) and pipe them to the stage on the same line. If channels from the ***grandMA*** and of the second console are triggered in this connection, the higher value will be sent (HTP).

The DMX-In can be used as an additional remote control channel ➠ **7.3** Remote control by DMX IN

**Attention:** If you are in a network connection of Master-Slave, only the DMX IN of the Master console will be transferred to the internal DMX port. The DMX IN of the Slave console can only be used for remote control purposes.

## 2.9.2 Configuring the internal DMX ports (A-H)

**5** By pressing a button in the PROTOCOL column, you can set a protocol for the appropriate DMX port (A-H) (referred to the respective Ethernet DMX converter) for the transmissions.

**6** By pressing a button in the CONFIGURATION column, you can call up the appropriate menu for this DMX output. ➠ next pages

**7** If the button is on "**enabled if Idle or Playback**", a DMX output via Ethernet is on, if the unit is not in a session (Idle). An exception is here the Playback Session, in this case the Slave stays on.

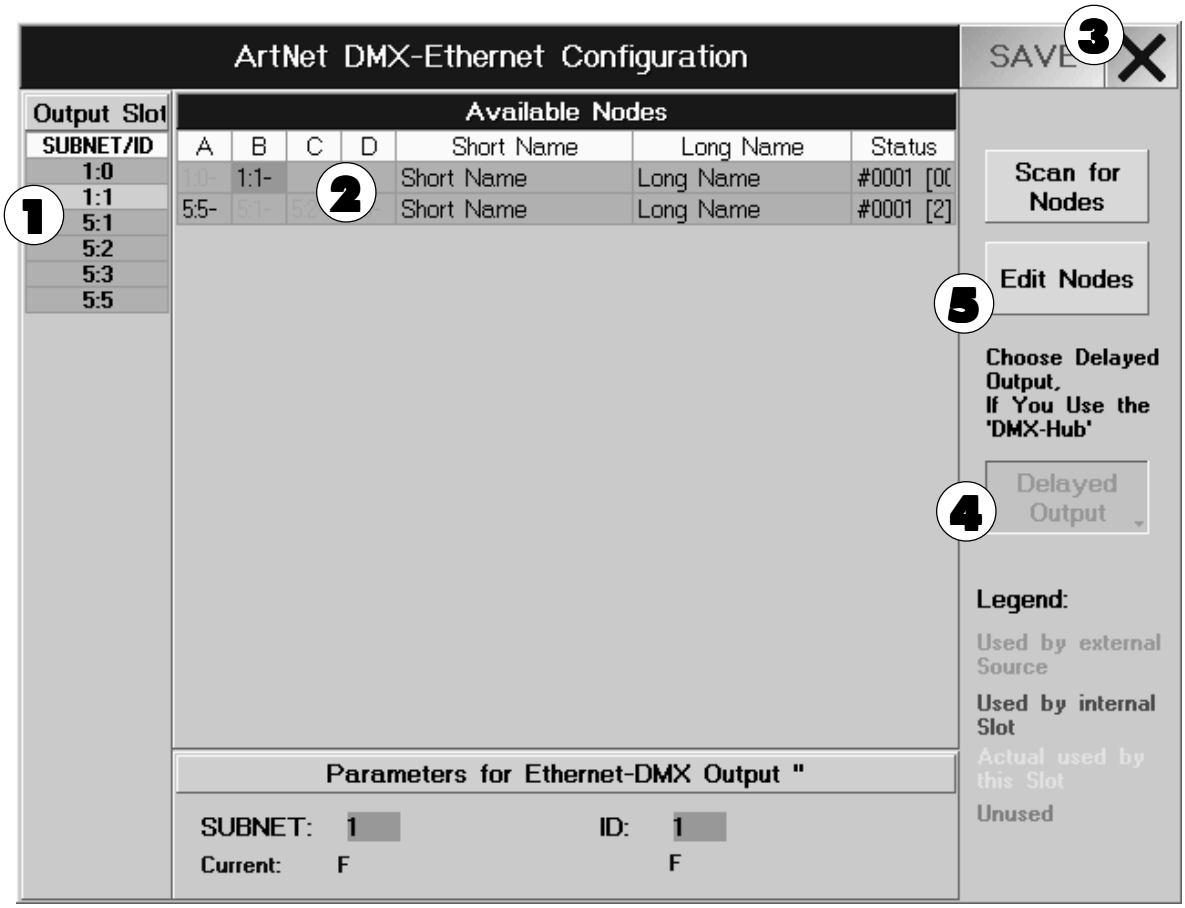
***In a Master-Slave configuration (Full-Tracking and Multi-User Session), the Slaves switch itselv to „Disable" (off). If a Master fails, the Slave with the higher priority will automatically be switched to „Enable". This way, the DMX will now be created by the former Slave (now Master). If two units are switched to „Enable", the data may will overlap. This has to be avoided under all cicrumstances!***

By pressing on this button, it will switch to "disabled"; now, a DMX output via Ethernet is no longer possible.

➠ next pages

## ARTNET DMX-ETHERNET CONFIGURATION

You can call up this menu by pressing a button in the CONFIGURATION column, if ArtNet has been selected as protocol.



It is possible to connect up to 16 Ethernet DMX Converter. On the DMX converters, unique SUB NET addresses have to be designated accordingly. The address switches of the individual DMX sockets have to be set to four different addresses. The settings modified on the DMX converter, can be overwritten by software. ➡ Artnet - Note Configuration, next page

If Artnet converters are connected, they will be searched for and displayed in the chart when calling up this menu. If the converter is being activated after opening the menu, you can search for the converter by pressing the **Scan for Nodes** key to insert the converter in the chart, if one is found.

1 In the left chart, all converters found will be displayed with the respectively set address for each DMX OUTPUT. The number in front of the colon is the SUBNET address, the number following is the address for the DMX OUTPUT.

Choose an address for the DMX OUTPUT.

2 In the right chart, one line is displayed for each converter. The selected DMX OUTPUT will be displayed on a green background.

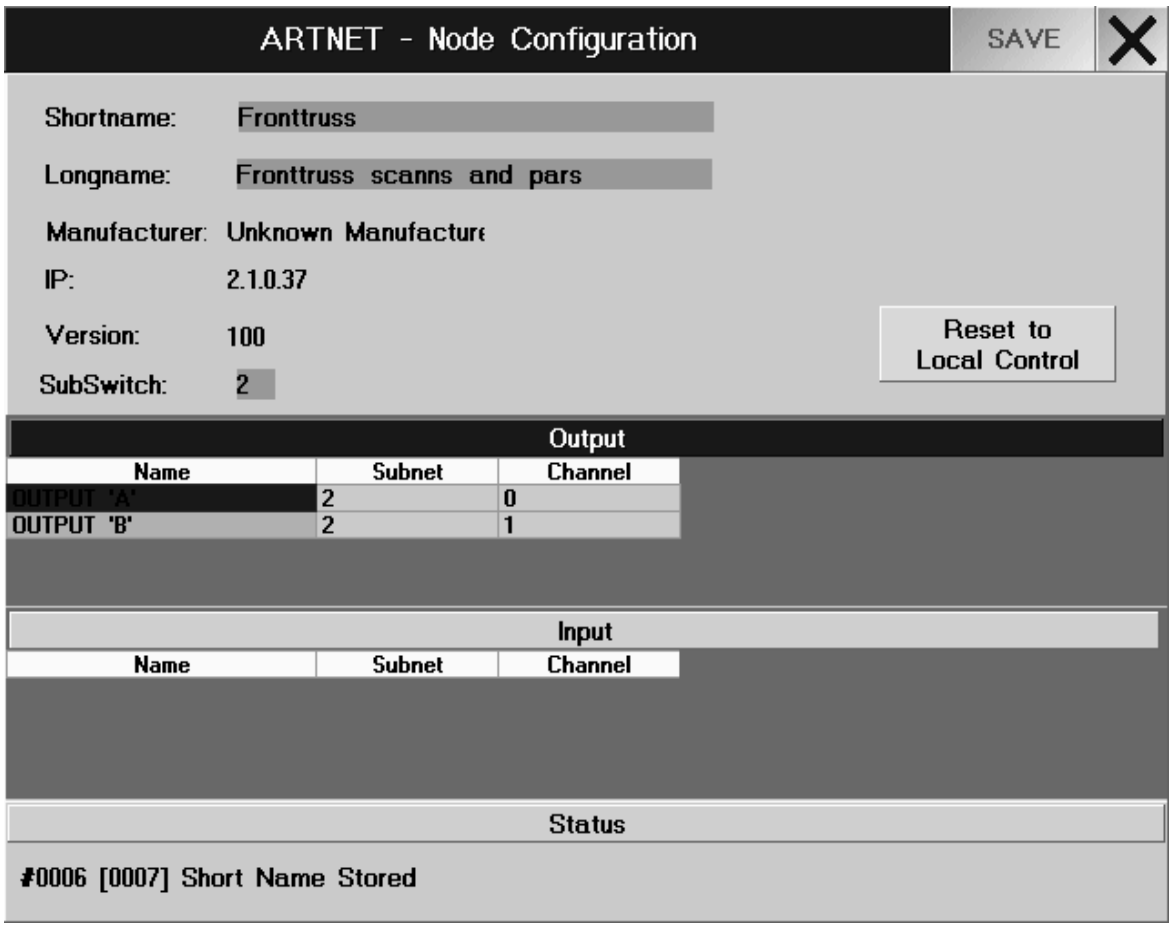
If an output is displayed on a red background, this indicates that it is already being assigned and can not be used.

Pressing the **Save** button will save all modifications.

3 Press the key X. Now, the converter for this DMX port is configured and the menu will be closed.

For the „DMX Hub“ from the Artistic Licence Company, this 4 button must be on „Delayed Output“, for all other units, this setting is not relevant.

If further ports are to be assigned, repeat all steps. When all settings are completed, press the SAVE key in the DMX-OUTPUT CONFIGURATION menu. The modified settings are now stored. Now, the blue ACTIVE LED at the assigned DMX converter is on and the DMX outputs can be used. When at the node data is received, the red LED is on.




## 2 Artnet - Node Configuration

First, choose a DMX converter to be edited in the table.

5 Pressing the **Edit Nodes** button for this Ethernet-DMX converter will open the menu.

As Shortname and Longname, you can enter any name for this converter.

The IP address of the ***grandMAs does not have to be*** adapted to this IP address here.

For Manufacturer, IP and version, only internal data from the converter will be displayed.

For SubSwitch, the DMX converter SubNet number can be changed. This change will overwrite the settings in the converter.

In the **Output** table, the available DMX outputs of the Ethernet-DMX converters will be displayed.

In the **Input** table, the available DMX inputs of the Ethernet-DMX converters will be displayed (DMX input ➠ two pages earlier).

In the tables, you can adjust the SubNet and Channel addresses for every DMX output or input. This change will overwrite the settings in the Ethernet-DMX converter.

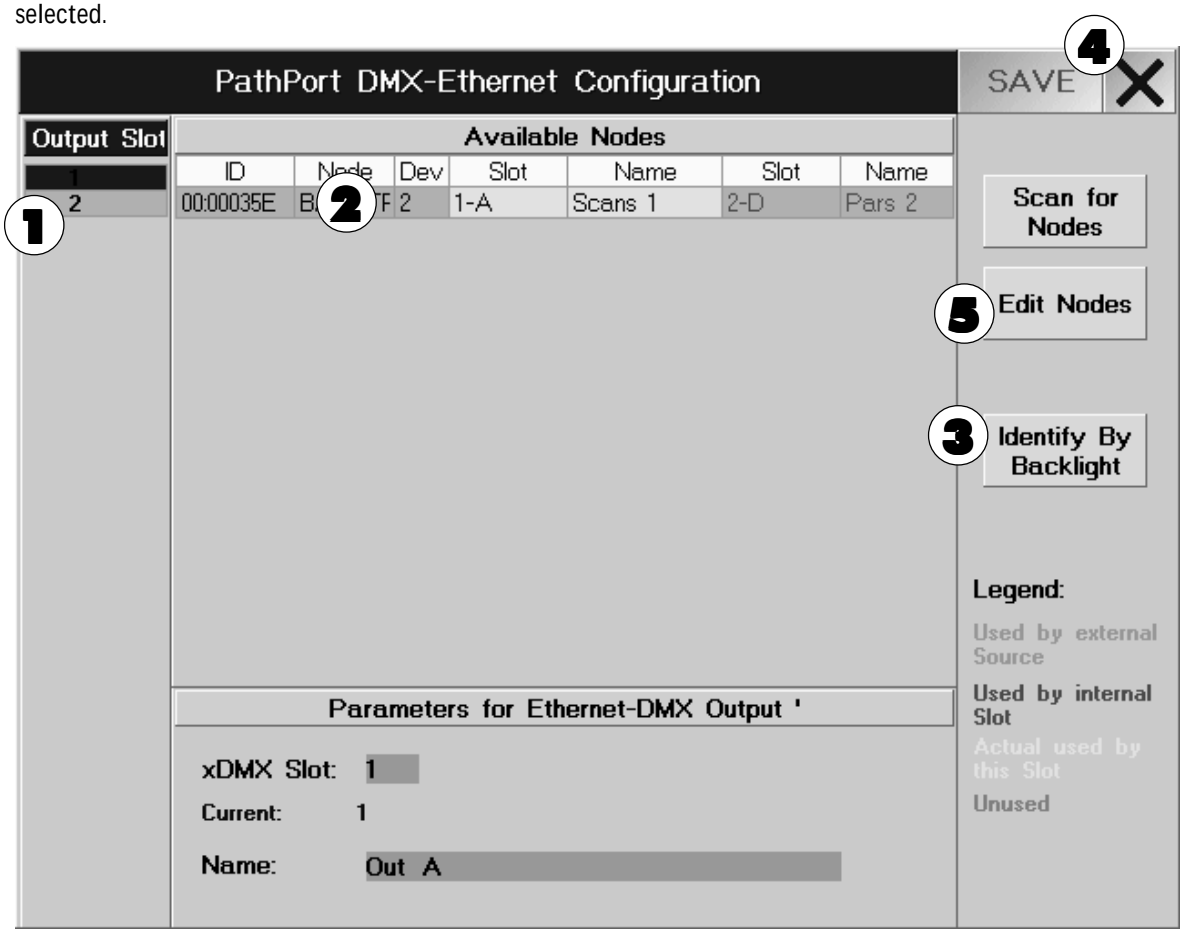
By pressing the **Reset to Local Control** button, the Ethernet-DMX converter will be reset to its standard setting (Defaults).

Pressing the **Save** button will save the modifications.

By pressing the **X** button, you will leave this menu.

## 2.9.4 PathPort DMX-ETHERNET-CONFIGURATION

You can call up this menu by pressing a button in the CONFIGURATION column, if the PathPort protocol has been selected.



Up to 64 DMX outputs can be triggered via the PathPort nodes. The IP address has to be adapted to the PathPorts Ethernet-DMX converter, something you can also do via the ***grandMA***. ➠ PATHPORT - Node Configuration, next page

If PathPort Ethernet-DMX converter s are connected, they will be looked for when you call up this menu, and they are displayed in the table (only, if the first 3 digits of the IP address of ***grandMA*** and PathPort Ethernet-DMX converter are identical, e.g.: 192.168.0.**x**).
If the Node is activated after having opened the menu, you can look for the Node by pressing the **Scan for Nodes** button to be displayed in the table.

1 In the left table, all found DMX outputs are indicated by a number. These are the assigned xDMX slots (➠ PATHPORT - Node Configuration, next page). The outputs can be distinguished by these numbers.

Select an address for the DMX output.

2 In the right table, one line is displayed for each Node. The selected DMX output will be indicated by a green background.

If an output is indicated by a red background, this means that it is already assigned and cannot be used.

3 If you press the **Identify by Backlight** button, the background lighting of the Display will blink.

4 Pressing the **Save** button will save the changes.

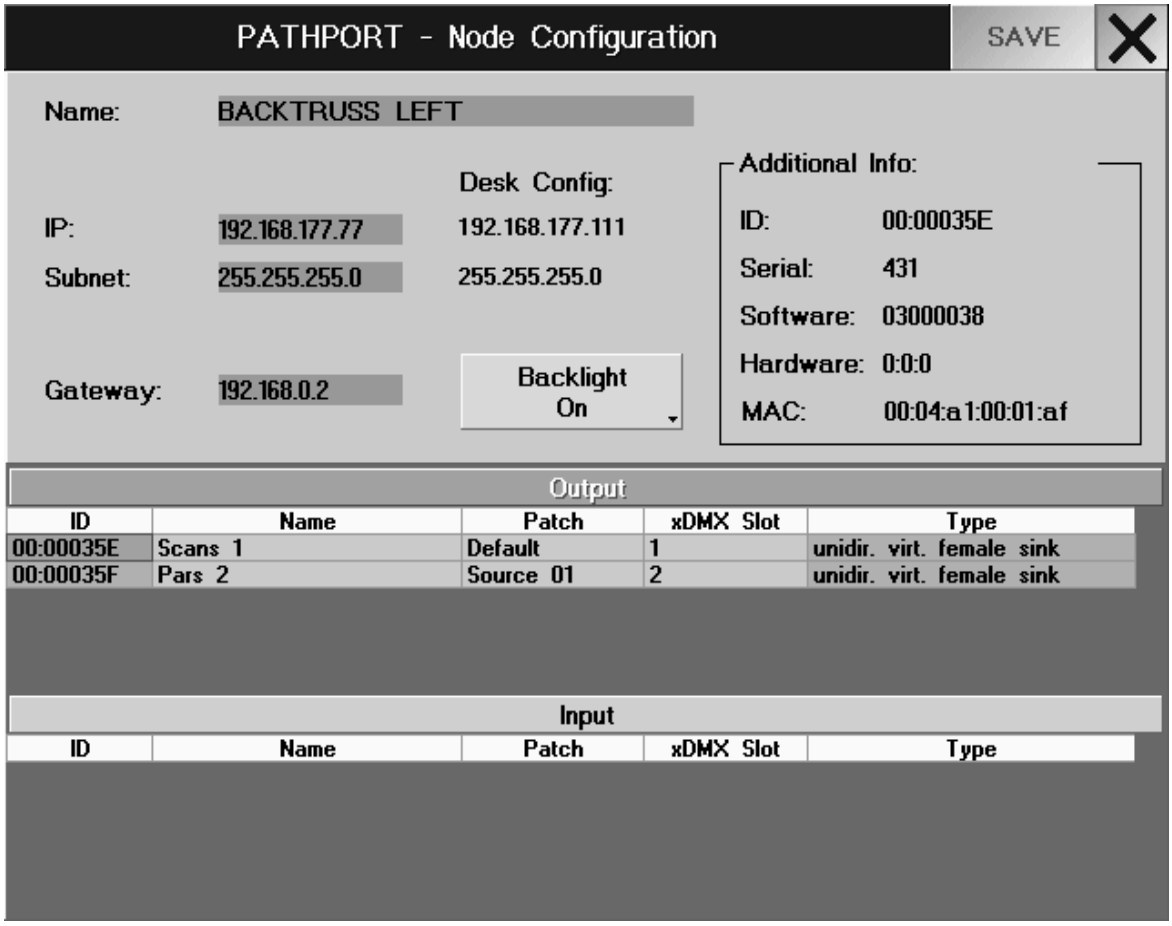
Press the **X** button. Now, the converter for this DMX port is configured and the menu will be closed.

If additional ports are to be assigned, repeat all steps as indicated. After all settings have been made, press the SAVE button in the DMX-OUTPUT CONFIGURATION menu. The changes made will be saved then. On the assigned Ethernet-DMX converter, **Active** will be displayed for the assigned DMX outputs and inputs.

## PATHPORT - Node Configuration

2 First, choose a DMX converter to be adjusted in the table.

5 By pressing the **Edit Nodes** button, open the menu for this DMX converter.




The data will be read from the Ethernet-DMX converter and be displayed.

Aside from the name, a deliberate name for this node can be chosen.

**IP:** here, you can set the IP address. When pressing the **Save** button, you have to start the Ethernet-DMX converter transmission by pressing **OK** in the opened window. The converter will reboot and set the new IP address.

Under Desk Config, the IP address and the Subnet of the console will be displayed.

If the SubNet is not identical, this has to be adjusted. For further information, please contact you network administrator.

Gateway: For further information, please contact you network administrator.

With the Backlight button, you can switch the background lighting on and off.

In the **Output** table, all available DMX outputs of the DMX converter are displayed.

In the **Input** table, all available DMX inputs of the DMX converter are displayed (DMX input ➡ four pages earlier).

In the tables, you can adjust the name, patch for every DMX output or input.

In the xDMX column, you can assign a number for every DMX output or input. Each DMX output or input will be assigned by this number. ➡ 1

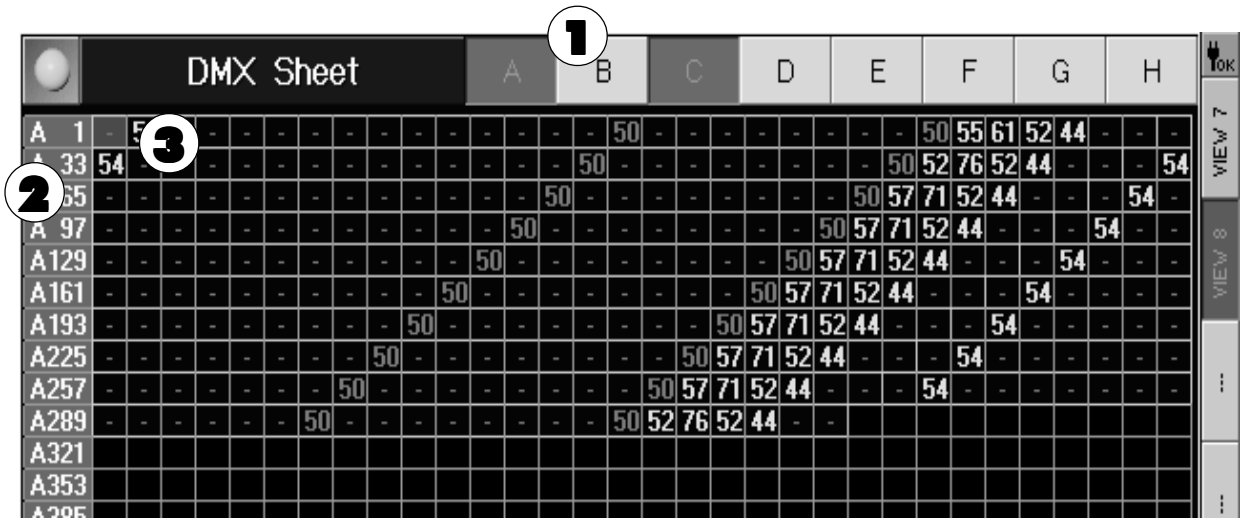
If you press the **Save** button, the changes are transferred to the converter.

By pressing the **X** button, you close the menu.

## 2.10DMX Output Window

Create a DMX Output Window (DMX) using a TFT Display. ➠ **3.1** Creating windows

**1** In this window, each patched channel can be displayed showing the value it is currently outputing.
By briefly pressing the respective keys (A – H) (dark background), all DMX ports' DMX channels will be displayed in this window (if needed, scroll through the window using the Encoder next to the Display.)




**2** The first DMX channel of this row is displayed here.

**3** If you position the mouse pointer on a cell, the DMX channel (possibly already patched channels with their fixture types and functions) will be displayed in the lower part of the window.

In the DMX-sheet you can also change the DMX-Patch:

***Cchange patch:*** Press button ***Move*** (LED lights) and click on a channel with left mouse button, hold left mouse button down and move the fixture to an empty space. You can only move the complete fixture, therefore you need enough space at the new address.

***Unpatch:*** Press button ***Delete*** (LED lights) and select a channel (with mouse or touch). All channels of the fixture will be deleted.

***New Patch of Fixtures:*** Fixtures, which are present in the fixture-Sheet, can directly patched in the DMX-Sheet
- select fixture in fixture sheet (with mous or touch)
- press button ***Assign*** (LED lits)
- press empty space in the DMX-sheet, the fixture will be patched (if the fixture needs more channels as available in this area, the procedure will be stopped. Look for an area with enough empty channels in a row.

Note: when you take action in the DMX-sheet and ***Full Access*** is aktive, dont press ***Save*** after closing ***Full Access*** - otherwise all changes in the DMX-shet will be rejected.

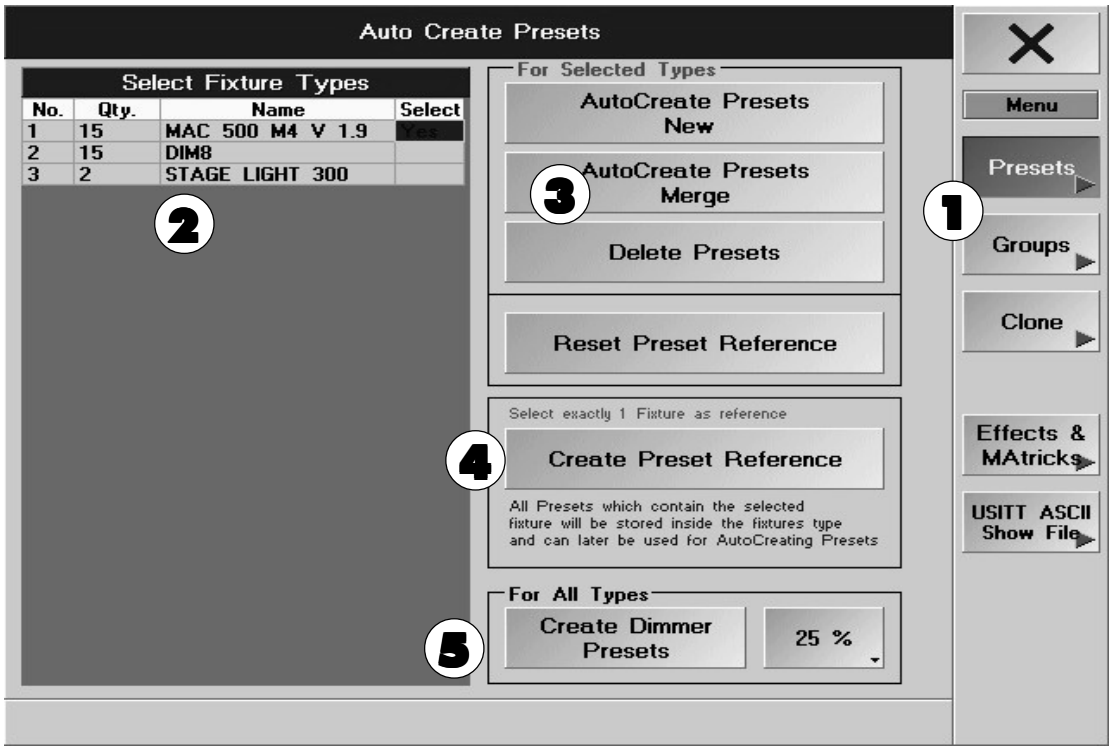
# 2.11 Auto Create - Creating presets, effects and group keys automatically

For most of the Fixtures in the library, there are ready-made presets that can be created in this window. Furthermore, ready-made effects and group keys for each Fixture and Dimmer can be also be created.

Call up AUTO CREATE in the SETUP menu.

## 2.11.1 Creating Presets automatically

**1** If the Presets button is pressed (green background), you are in the Auto Create Presets menu.




**2** In the table, all Scanner and Dimmer types are displayed that are used in the current Show. On the right of each Scanner and Dimmer, you'll find the Select column. By choosing a cell and pressing the Encoder on the right of the Display, you can select them and the display switches to Yes. When creating Presets, these will only be created for these Scanners or Dimmers.

**3** By pressing the ***Autocreate Prests New*** button, you can create **individual** Presets for **each** Scanner type. The created Presets will now be available in the individual PRESET windows. See also: ➠ **2.7.** Function Sets - Names (Channel Values) and Presets

By pressing the ***Autocreate Presets Merge*** button, you can create the Presets for all Scanner types simultaneously. Same names of different Scanners will be displayed on **one** PRESET button.

By pressing the ***Delete Presets*** button, you can delete the Presets of the selected Scanners and Dimmers.

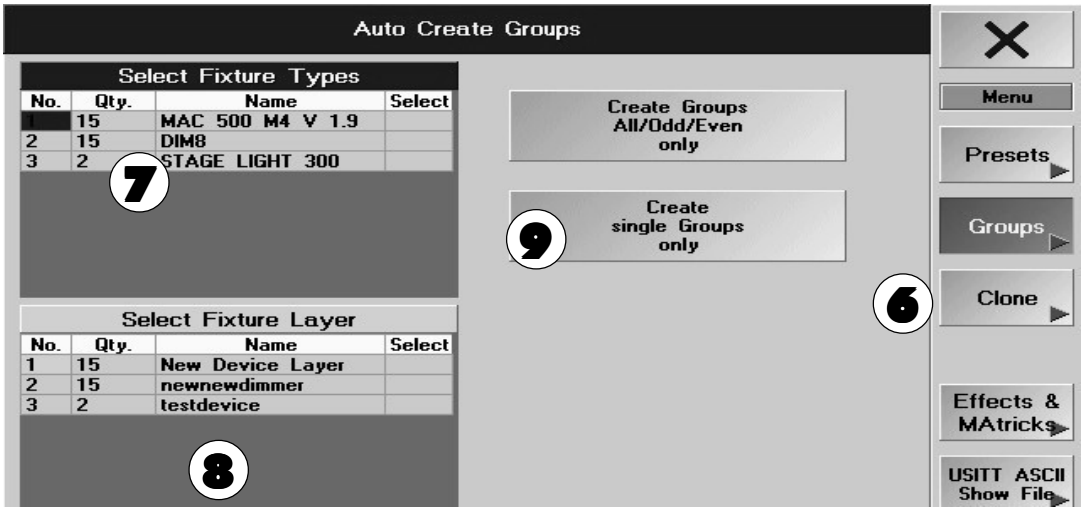
By pressing the button ***Reset Presets References*** you can delete all self created preset references and the presets created from the function sets from library.

**4** To save self-created Presets of a Reference Scanner, select the appropriate Scanner (in the Fixture Sheet). Press the "Create Preset Preference" button. The Presets will now be saved to the Fixture in the USER Library in this Show (same name, can only be distinguished by its version number). If you sign-on further Fixtures of this type (same version), you can load the created Presets with CREATE NEW PRESETS (see item **3**). To use this Fixture with the self-created Presets in other Shows or on other consoles, too, you have to save this Fixture in the USER Library on disk or floppy. ➠ **2.5** Updating the Fixture Library (USER Library)

**5** By pressing the "Create Dimmer Presets" button, you can create Presets in differently adjustable levels for each Dimmer channel. The Presets can bei adjusted in 4 levels (5, 10, 20, or 25%) by pressing the button on the right.

## 2.11.2 Creating groups automatically

**6** If the Groups button is pressed (green background), you are in the Auto Create Groups menu.




**7** In the upper table, all Scanner and Dimmers are displayed that are used in the current Show.

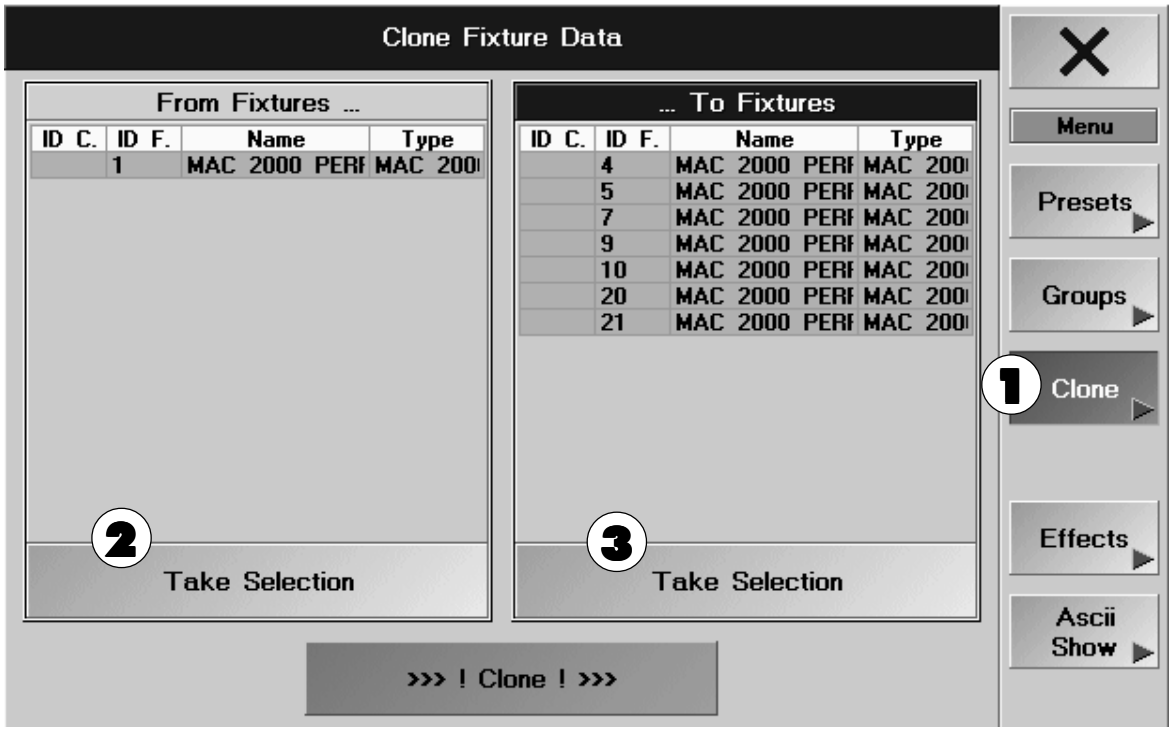
**8** In the lower table, all “Fixture Layer“ are displayed that are used in the current Show.

On the right of each Scanner and Dimmer, you’ll find the Select column. By choosing a cell and pressing the Encoder on the right of the Display, these are selected and the display switches to Yes. When creating groups, groups will be created only for these Scanners or Dimmers.

**9** By pressing the CREATE GROUPS button, one ODD button will be created for each Scanner type, with which you can select all odd-numbered Scanners simultaneously. One EVEN button to select all even-numbered Scanners, and an ALL button, to select all of the two.
By pressing the CREATE SINGLE GROUPS button, you can create a single button for each Scanner type in the GROUP window.

## 2.11.3 Clone Fixture - Copying Fixture data globally (cloning)

**1** If the Clone button is pressed (green background), you are in the Clone Fixture Data menu.




You can clone (copy) ***all*** data of one or more fixtures globally. In this, all Preset, Group, Cue and Effect data are cloned from the first fixture/s (From Fixtures...) to the target fixture/s (...To Fixtures). If you select the same number of fixtures on each side, the data of the first will be transferred to the first, of the second to the second, etc.

**2** Select the fixture/s that you want to clone (Fixture Sheet). If you want to clone several fixtures, you have to observe the sequence in which you select them. Pressing the left Take Selection button will display the fixtures in the left table (From Fixtures...).

**3** Select the fixture/s, to which you want to clone the data (Fixture Sheet). If you want to clone several fixtures, you have to observe the sequence in which you select them. Pressing the left Take Selection button will display the fixtures in the right table (... To Fixtures).

By pressing the >>>! Clone!<<< button, you can clone all data.

**Attention:** All target fixture data created sofar will be overwritten/deleted.

## 2.11.4 Auto Create Effects

If the Auto Create Effects button is pressed (green background), you are in the Auto Create Effects menu.

By pressing the **Create Built-in Dafault Effects** menu, you can create preset effects that will then be available in the EFFECT pool. ➠ **6** Effects

By pressing the **Import Effects** button, you can load saved effects from floppy.

By pressing the **Export Effects** button, you can save the created effects to a floppy.

## 2.11.5 ASCII Show Import

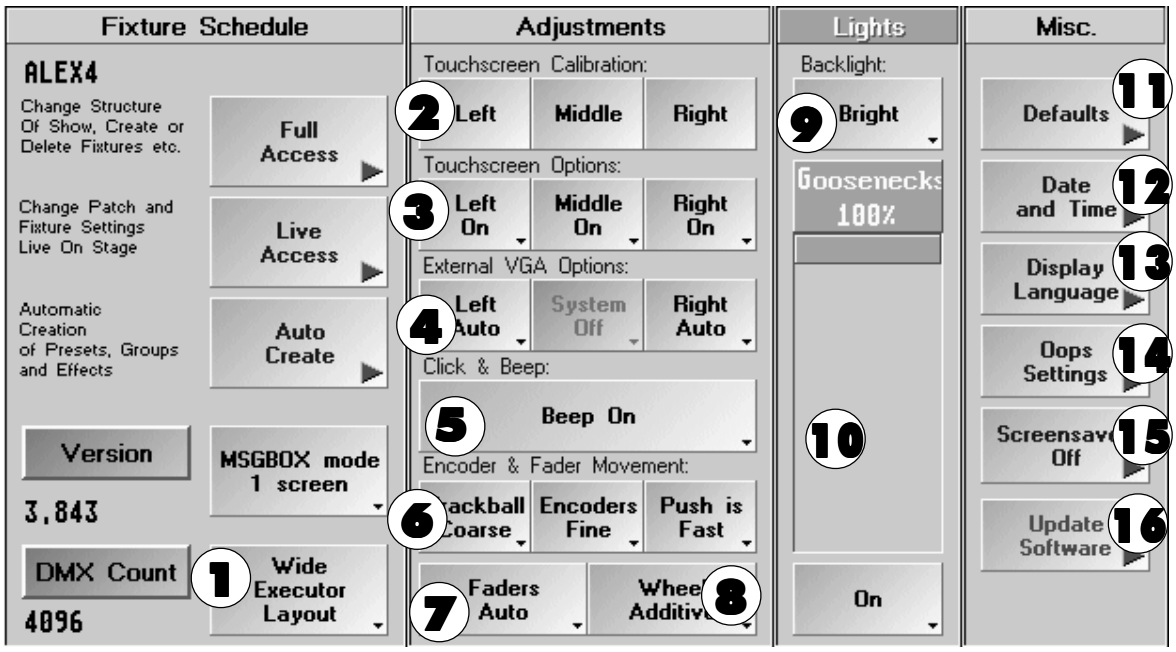
If the Ascii Show button is pressed (green background), you are in the ASCII Show Import menu.

Before you load an ASCII Show, you should save the Current Show, as it could be overwritten.

If the FDD contains a floppy with a Show in ASCII format (file with the .ALQ extension), you can load the Show by pressing the button. It is not possible to transfer Scanner data. The Default User Settings (➠ **2.8** Saving or Loading Profiles) will be loaded. The Show will be saved under the name AssciiShow and should be renamed and saved again. ➠ **10** Saving and Loading a Show

Use the **X** button to leave the Auto CREATE menu. The data will only be saved to the RAM - permanently only when saving the complete Show to disk or floppy. ➠ **10** Saving and Loading a Show

## 2.12 Settings in the Setup Menu




**1** By pressing this key MSDBOX Mode, you can set the confirmation menus (e.g. STORE) to be displayed on just the right-side TFT touchscreen or on all displays.
By setting the soft key „Executor Layout“ to „Wide“, a ***grandMA*** light, ultralight oder RPU will use the same executor numbering as the „big brother“ ***grandMA*** does. Therefore the first button executor has number 21. Please have in mind, that in wide mode the printed labels on the consoles surface are wrong. The advantage of wide mode is, that all executors can be accessed by the command line. This is useful when porting shows from a ***grandMA*** into a smaller console.

**2** By clicking this key, four calibrating keys, numbered 1 to 4, will be displayed on the respective TFT display. Touch the keys using your finger or the supplied pen (special pen with soft rubber core). The display will automatically switch back after the last key is touched. The touchscreen is now calibrated and the settings will automatically be stored.

**3** With the respective keys, the touch screens can be switched on or off. It is possible that a fault may cause the mouse to freeze in one position and can no longer be operated. In this case, the touchscreens can be switched off. For this, use function key F9 on the keyboard.

**F9 will switch off all three touchscreens (emergency switch). To switch the touchscreens back on use the mouse.**

**4** To toggle the mouse function on both external monitors on and off. In AUTO mode, the software will recognize if a monitor is connected or not and will switch the mouse function for the external monitors on or off, accordingly.

OFF **will not allow** any mouse function, while ON will keep the mouse function **activated** at all times.

**5** With this key, the ***grandMA***'s internal speaker be switched on or off (not available on older ***grandMA***s).

**6** To set the sensitivity of trackball and the encoders to coarse, fine or extra fine (16bit resolution). With the PUSH key, you can set the Encoder's sensitivity when holding it down and turning.

**7** Switching between the Motorfader functions (Executor Fader, Channel Fader).

| | | |
|---|---|---|
| AUTO: | Executor Faders: | When switching between the Pages, the Motorfaders will automatically pick up the values stored last. |
| | Channel Faders: | Faders adjust to the called-up values of the allocated channels. |
| MANUAL: | Executor Faders: | When switching between the Pages, the stored values will be called up, but the Faders will **not** follow. To change a stored value, you have to use the Fader to manually set it to a higher or lower value. |
| | Channel Faders: | Faders do not adjust automatically to the called-up values of the assigned channels. To change a stored value, you have to use the Fader to manually set it to a higher or lower value. |
| DISABLED: | **Faders without function** | |
| | Executor Faders: | When switching between the Pages, the stored values will be called up, but the Faders will not follow. |
| | Channel Faders: | Faders do not adjust automatically to the called-up values of the assigned channels. |

**8** To switch the wheel's functions for the dimmers.

Additiv: All dimmer values will be changed simultaneously. If they reach "0" or "FF", they will be aligned.

Incremental: All dimmer values will be changed simultaneously. If they reach "0" or „FF", the respective intervals will be maintained.

Prop.+: All dimmer values will be changed in percentages and will reach "0" simultaneously.

Prop.–: All dimmer values will be changed in percentages and will reach "FF" simultaneously.

**Please note, that with PROP+ a change of the value "0" is not considered a change.**
**Please note, that with PROP– a change of the value "FF" is not considered a change.**

**9** Switch between "Light" and "Dark" display background illumination.

**10** The desk lamp can be switched either on or off with the ON/OFF key. The brightness of the desk lamp can be changed using a left mouse click on the blue bar or using the touchscreen.

**11** By pressing this key, you will enter the DEFAULTS menu. All general presets can be set in this menu. ➠ **2.13** Settings in the DEFAULTS menu

**12** By pressing this key you will enter the DATE and TIME menu. ➠ **2.12** DATE and TIME

**13** By pressing this key you can change the display language.

**14** By pressing this key, you will open the OOPS Function Options menu ➠ **below**

**15** To switch the screen saver off an on. By pressing the key briefly, a window will appear where you can select the time after which the screen saver will activate.

**16** By pressing this key, you will reach the UPDATE SOFTWARE menu. The operating system, the operating software as well as the console software and the fixtures can be updated from this menu. ➠ **11** Software Update

**17** To leave the SETUP menu.

### 2.12.1 OOPS Function Options

If the OOPS function is activated, the will be able undo commands or values that you set. This function requires a large amount of system resources. This requires a lot of processor power, what could slow down the console performance. This could interfere the execution of programs; that is why you can switch it of completely or for individual functions. ➠ **1.7.6** OOPS function

General: If this key is set to Enabled, all OOPS functions are available – except for VIEWS commands and entries in the PROGRAMMER ( both of which can be switched off separately; for further information see below). Pressing the Enabled key next to General will toggle it over to Disabled and all OOPS functions will be switched off.

Oops for Views: If the key is set to Enabled, OOPS functions can be used for VIEWS calls and creating or deleting VIEWS keys. Pressing the Enabled key will toggle it to Disabled and the OOPS function can no longer be used for VIEWS commands.

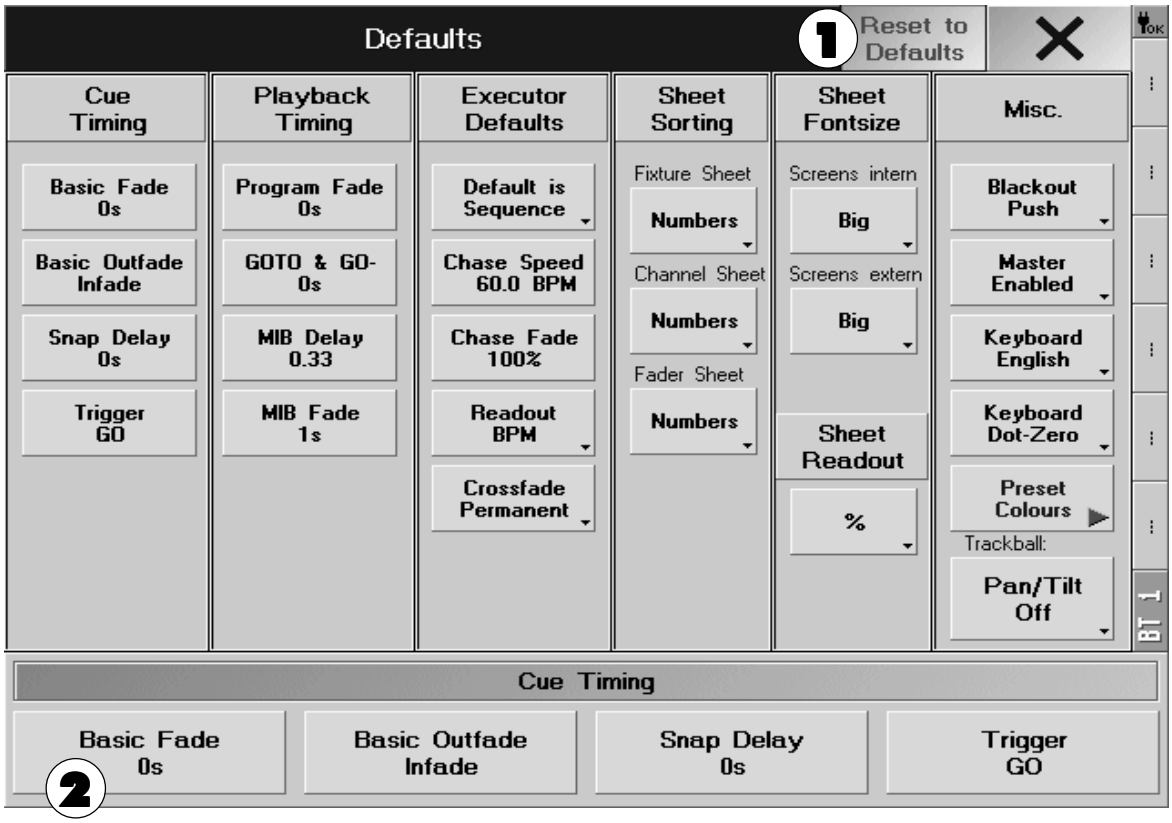
Oops for Programmer: If the key is set to Enabled, OOPS functions are available for all entries in the PROGRAMMER (selecting/deselecting or activating/deactivating Fixture or Dimmer channels). Pressing the Enabled key will toggle it to Disabled and the OOPS function can no longer be used for entries in the PROGRAMMER.

In strong bass enviroments (vibrations), please switch off all OOPS settings and "Autosave" (disabled).
➠ ***10*** Saving and Loading a Show (Autosave)

Pressing the X key will close the menu and store the settings.

## 2.13 Settings in the DEFAULTS Menu

Pressing the DEFAULT key in the SETUP menu will bring you to the DEFAULTS menu.




### Cue Timing

This column will display the default times and settings that will be used when storing Cues and Sequences. Using the Encoders, you can adjust the individual times and trigger calls.

### Playback Timing

The duration set for the **OFF Time** will be used when switching off Executors (OFF key).

**GOTO & GO-:** If a specific time is set when calling up a Cue using the GOTO or GO- function, the Cue will be called up with this duration. If Cue Timing was set, the Cue will be called up with the duration programmed in this Cue. You can overwrite the Goto Default duration at any time. ➡ **4.2.3** Default Sequence (Master Sequence)

Here you can enter a Default time for MIB DELAY and FADE. ➡ **5.1.4** Move in Black Option

### Executor Defaults

**Default is Sequence/Chaser:** With this key, you can define, whether a newly programmed sequence will be created as a Chaser (one look after another running automatically) or as a Sequence (press go for cue 1 and then press go for ce 2 etc.) (default setting).

**Chase Fade:** Here, you can define the preset for Chase Fade.

**Chase Speed:** Here, you can define the default Chase Speed and Effect Speed.

**Readout:** By pressing the key, you can here switch the Chaser Speed between BPM (beats per minute), Hz (beats per second) and SEC (seconds).

The default Chaser Speed is also used as the default for the Effect Speed.

**Crossfade Reload/Permanent:** Here, you can define whether manual cross fading should be performed just in one direction (Reload) or in both directions (Permanent) when moving a fader set to cross fade.

## Sheet Sorting

By the SORTING column, you define according to which aspects the fixtures and channels shall be sorted when setting up new windows. You can switch to the next option by clicking on the respective keys.

## Sheet Fontsize

With the FONTSIZES column, you can define the type size of new windows.

## Sheet Readout

Preset for the output of numbers in the OUTPUT, CHANNEL and PATCH windows.

## Misc

– Function of BLACKOUT key:
  PUSH: serves as push key (key)
  TOGGLE: will remain active when pressed
  DISABLED: switches the blackout function off

– Function of the GRANDMASTER FADER:
  ENABLED: Fader active
  DISABLED: Fader inactive

– KEYBOARD GERMAN/ENGLISH: Switch option for country-specific keyboards.

– KEYBOARD Dot-Zero: Switching the key sequence on the numeric keyboard to Zero-Dot. The key caps can be exchanged without any problems. ➡ **1.7.1** Layout and Controls ***grandMA*** item 15 ***or*** **1.7.2/3** Layout and Controls ***grandMA*** (ultra) light item 21

– With the **Preset Color** key, three different presets for the color scheme of displaying preset keys can be called up.

– Functions of the Trackball (not for ***grandMA light and Ultra-light***)

  Pan/Tilt: OFF
  - Trackball button on (LED is on) - Trackball controls Pan and Tilt
  - Trackball button off (LED is off) - Trackball has no function

  Pan/Tilt: Mouse
  - Trackball button on (LED is on) - Trackball controls Pan and Tilt
  - Trackball button off (LED is off) - Trackball controls the mouse, using the Prev., SET and Next keys, you can operate the appropriate mouse buttons.

  Pan/Tilt: Mouse/OFF
  - Trackball button on (LED is on) - Trackball controls Pan and Tilt
  - Trackball button (LED blinking) - Trackball controls the mouse, using the Prev., SET and Next keys, you can operate the appropriate mouse buttons.
  - Trackball button off (LED off) - Trackball has no function

**1** RESET DEFAULTS key: Will reset all changes back to factory settings.

**2** Encoder labelling for figures within the Cue Timing column.

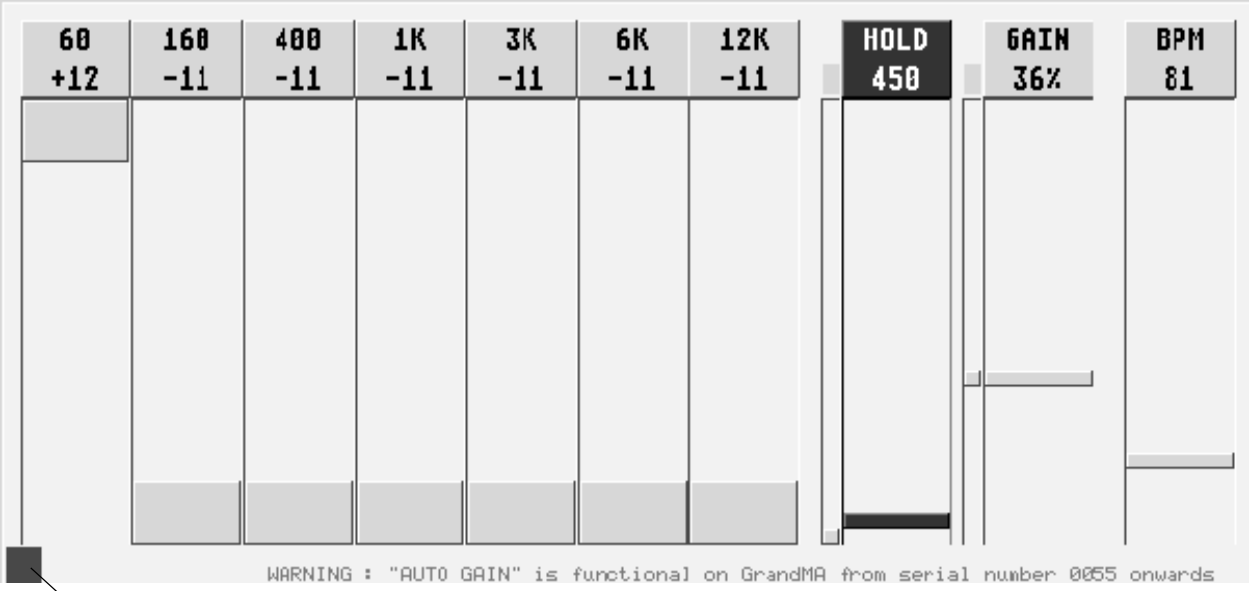
## 2.14 Setting Sound Signals

The sound signal is used for triggering Chasers and Sequences. In other words, this is an electronic, graphic equalizer. In order to slowly balance any fluctuations of the audio signal, a specific compressor function has been integrated.

You will find an integrated adjustable HOLD-OFF function. This function will prevent any double triggers (for example: with fast BASSDRUM beats). Beats will be automatically recognized via the incoming sound signal (BPM).

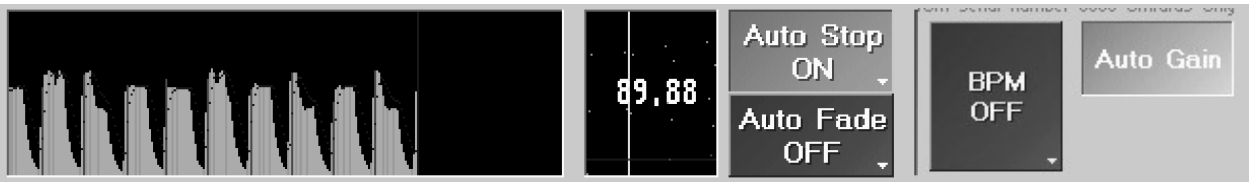
Press the TOOLS key once.

Call up this menu from the TOOLS menu using the **Sound Settings** key.




**Trigger monitor**

To set an equalizer, pull the respective “slider“ to the desired position. In the left lower corner, there is a visual trigger signal (monitor) for your orientation. The small dot on the left side of the HOLD Function will indicate the remaining HOLD time. The small dot on the left side of the GAIN indicator will show the compression rate of the audio signal.




The right small dot will indicate the state of compression of the audio signal. The sound signal is visualized in the lower left part of the display. The analysis of the sound signal will be indicated in the smaller right part of the window, including indication of the recognised BPM (Beats per minute). By moving the BPM slider, the beat can be set. The next-possible beat will be recognised from the incoming audio signal and will be used to control the BPM.

If the BPM key is ON, the currently recognised beat will be used. When switching the BPM to OFF, the last recognised beat at the time will remain unchanged and will be used. You can adjust the value using the BPM slider.

If the Auto Stop key is on ON, the Chase or the effect will be stopped when there is no sound signal. If the Auto Fader key is also on ON, the Chase or the effect will be faded out when there is no sound signal.
When you switch the Auto Stop key to OFF, the Chaser or effect will continue with the latest BPM value measured.

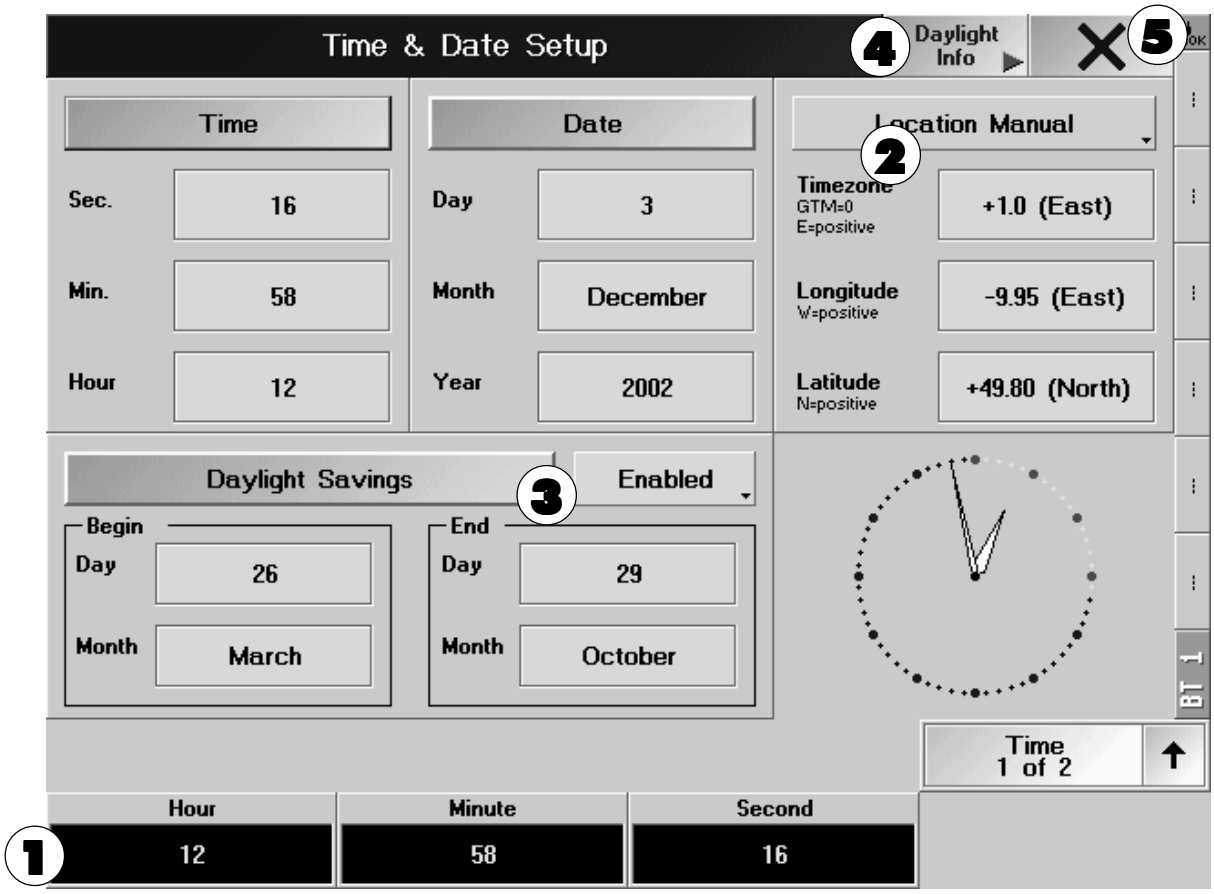
The AUTO GAIN function can be used for ***grandMA***s from serial no. 0055 and later (key will turn dark-grey key, HARDWARE modification). ***grandMA*** ultra-light allows **only** Auto Gain.

**For *grandMA*s with serial no. up to 0054, this key can *not* be used.**

You can leave this menu by pressing the X key; all settings will be stored.

## 2.15 TIME & DATE Menu

Pressing the TIME and DATE key in the SETUP Menu will open the following menu.




**1** You can set TIME and DATE with the encoders below the display. (You can switch encoder functions by pressing the button Time).

**2** Button display: **Location Manual**, fix entry of values.
Set position for the automatic control of (➠ **8.3** Agenda Menu) sunrise and sunset calculation. Clicking on the respective keys will open a window, where the position can be set.
Information regarding the respective position can be looked up in a software program that can be downloaded from the internet at: www.djuga.net/winglobe.html.

**or:**

Button display: **Location Auto**, values are automatically used by a connected GPS receiver.
Pressing the button will open the **GPS-Info** menu. In this menu, you can modify the settings for a NMEA GPS receiver connected to the serial port. This receiver will then determine the position of the ***grandMA***. This can be especially useful e.g. on ships cruising on the oceans. For best satellite reception, check for an unhindered view to the sky when setting up your equipment.

**3** If the key is set to **Enabled**,the clock will automatically switch between summer and winter time. Pressing the key deactivates this function (Disabled). Pressing the respective key in the **Begin/End** field will open a window where you can set the beginning and the end of the summer time.

**4** Pressing this key will open a sheet, where the calculated times for Dawn, Sunrise, Sunset and Dusk for yesterday, today and tommorrow are listed.

**5** Leave this menu with the X key.

# 2.16 User Management

## 2.16.1 Introduction

The new user management and security features include:

- Temporary simple desk locking mechanism.
- User management for up to 32 users.
- Users have privilege levels.
- These levels of privilege can prevent an inexperienced user from destroying show data.
- Users can have their own user profile.
- User profiles include views and default settings, even a set of default views that can be loaded into any show.
- Multiple users can share one user profile ( although they can have different privilege levels).
- Forced login when the desk starts up as an option.

When you get a new desk, or you update your old version:

All user management features are disabled by default. If you do not touch them, you will not notice a difference to the older versions of ***grandMA*** software. Internally you will be automatically logged in as administrator, working with a default user profile.

The user management is not show-dependent. It is affecting all shows on your desk.

## 2.16.2 Locking the Desk

Locking the desk is a method to temporarily protect your desk against misuse from inexperienced users. It is not suitable for permanent protection.

Locking the desk does not affect the output. All programs that are running continue to do so. But the surface of the desk is inaccessible, even moving the grand master fader will be ignored.

***Activating Desk Lock:***

- Press CTRL-PAUSE on the PC-Keyboard
- All touchscreens will show DESK LOCKED.
- Desk is locked.

***Deactivating Desk Lock:***

- Press CTRL-PAUSE on the PC-Keyboard again.
- All touchscreens will restore in the original screens.
- Desk is unlocked.

***CAUTION:***

Due to the fact, that the grand master fader is not motorised, master dimming may jump to an unwanted level upon deactivation of desk lock. So have a look at it before you deactivate the desk lock! For the ***grandMA*** ultra-light this is also valid for all faders.

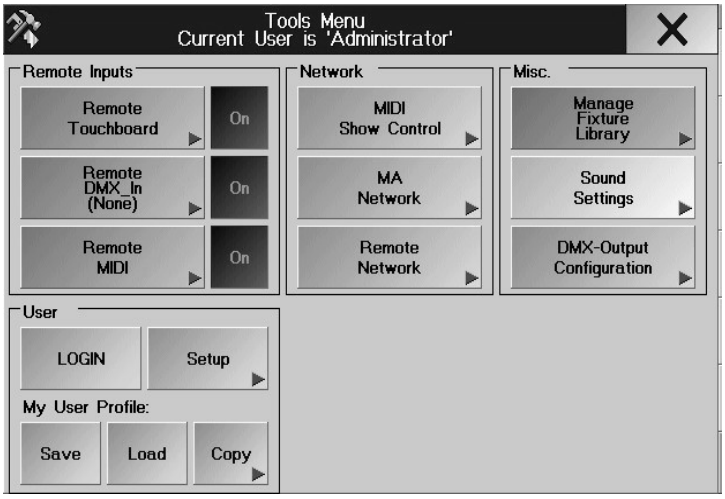
## 2.16.3 Concept of User Profiles

- The desk has a list of users.
- Each user can have his own user profile, but he can also share a profile with other users.
- A user profile includes views, quikey arrangement and playback settings.
- Part of each user profile is global and independent of the currently loaded show. This part is used to store and load default Views, Setup and Default settings (Encoder and Trackball sensitivity and Wheel function ➠ **2.12** Settings in the Setup menu Furthermore Cue Timing, Executor Defaults, Sheet Sorting, Sheet Fontsize, Sheet Readout, Misc., Preset Colours, Attribute Grouping and Store Options ➠ **2.13** Settings in the DEFAULTS menu).
- Each show contains a full set of local user profiles. These local user profiles can be stored as default in the global parts and they can be loaded from there.
- When saving a show on floppy disk, all users registered to this console will also be saved with all default settings. When loading a show from floppy disk to another console, all users including all default settings will automatically be transferred to the new console. Individual users can use these profiles for a particular show or for other shows in which this console is used.

## 2.16.4 Creating a new User

To create a new user, you need to have administrator privilege level:

- Go to ***Tools*** menu and ***User*** / ***Setup***
- Press the ***New*** in ***User List*** and type name and password. Select and confirm Rigths and Profile by turning and pressing the encoder,
- Change the rights (privilege level) for the new user.
- By default, the new user utilizes the DEFAULT user profile. If the user utilizes a different or an independent user profile, it will change his user profile. If you create a new user profile in this way, it is initialised with the default profile.



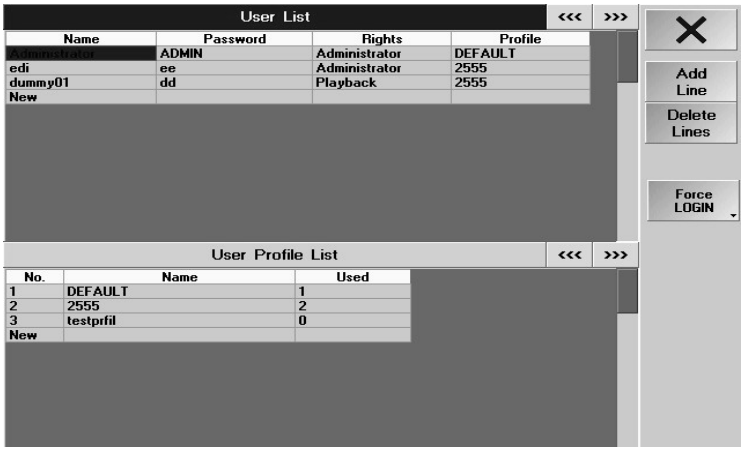
Beside the users which are in the list, there is always one hidden administrator.

You can not delete or change this administrator.

His user name is ***ADMIN*** and he is using the DEFAULT user profile.

Login becomes enabled if at least one user is in the visible user list.

The presence of the ADMIN user destroys any real security. On the other hand you will never really loose access to your desk



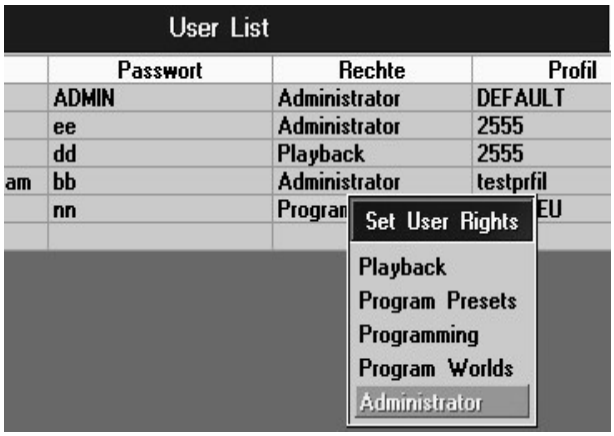

## 2.16.5 Deleting an User

To delete a user, you need to have administrator privilege level:

- Go to TOOLS menu.
- Go to USER / CONFIGURATION.
- Select the user you want to delete.
- Press the DELETE USER key.
- The user will disappear. If he was the only one to use a certain user profile, this profile will also be deleted.

Please note, that you can not delete yourself from the list.

## 2.16.6 User Rights




To change the rights (privilege level) of an user, you need to have administrator privilege level:

- Go to ***Tools*** menu.
- Go to ***User/ Setup***.
- Edit the RIGHTS field of the respective user you want to change.

This is because you are in the user manager menu and have administrator rights. If you were to change that, you would lock yourself out from this menu.
At the moment, the following privilege levels are implemented:

PLAYBACK:

- User can use all playback functions.
- He can load shows.
- He has no access to any function that would change the contents of the show, beside from playback parameters.
- Even if the user has changed playback settings, the show will not be saved. The next time the desk starts or the show is loaded the show integrity will not have been compromised.

PROGRAMMING PRESETS:

- Additionally, the user can create Presets, other programmings are not possible.

PROGRAMMING:

- The user has full access to all functions, except user management, software updating and „worlds“.

PROGRAMMING WORLDS:

- Additionally, the user can create and modify „Worlds“.

ADMINISTRATOR:

- Along with all other functions, User Management and Update of Desk Software are enabled.

Some ***grandMA*** operators may find it helpful to create an user with playback rights only, for their own personal use. After they have finished programming, they log in as this playback user, so they can be sure that they will not change anything in their newly completed show data ( of course they should save their show before they log in as playback user!).

It is not necessary to save the whole desk after you have changed something in the User Manager. All data of the User Manager is immediately saved when you leave the User Manager menu!

## 2.16.7 Login

Login is only enabled if at least one user appears in the user list (TOOLS menu / User Configuration).

Manual login:

- Go to TOOLS menu.
- Press LOGIN key.

**Never push Login without knowing the password! Otherwise you can only log in by “ADMIN“.**

All touchscreens will show LOGIN, and you have to enter a valid user name.

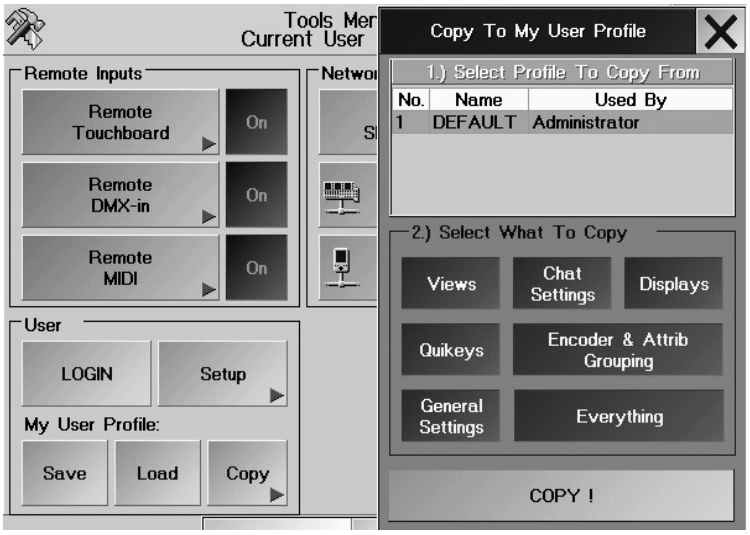
During LOGIN, the surface of the desk is locked.

LOGIN does not affect playback. All programs that are running continue to do so.

After a successful login, the views of the corresponding user profile will appear on the screens. Furthermore, the user’s saved setup and default settings will automatically be loaded, too.

If a user loads a show for the very first time (he has never used this show before), this show will be loaded with the previously used profile and NOT with his personal user profile. If needed, the personal user profile can be loaded afterwards.

## 2.16.8 Saving or Loading Profiles




User profiles are saved independently from the show and can thus be loaded for any other show afterwards.

- Go to the ***Tools*** menu and ***User*** / ***Setup***.

- Under **User Profile List** in the **New** line, enter a name for a new profile.

- Select the user cell under **User List** in the **Profile** column. Press the Encoder , select the profile, and take over by pressing it again.

If this user is logged in, the seetings will be saved to this profile when saving the profile (Save User Defaults).

If this user is not logged in, he receives a message, that his profile is empty. Confirm this message and a selection menue pops up:

1) select a profile

2) select what to copy (button becomes dark green) or select ***Everthing*** for complete profile

. confirm with ***COPY!***

User with rights higher than PLAYBACK can press ***Copy*** and change profiles of other user (not his own profile)

***Save***: save current settings (independently from the actual show) in your User Default Profile

***Load***: load your User Default Profile (independently from the actual show)

## 2.16.9 Forced Login at Desk Start

Forced Login is enabled only if at least one user appears in the user list (TOOLS menu / User Configuration).

To change the Forced Login setting, you need to have administrator privilege level:

- Go to ***Tools*** menu.
- Go to ***User*** / ***Setup***.
- Press the FORCE LOGIN AT DESKSTART key.

If you switch on FORCED LOGIN, upon every desk start or loading of a show, the desk will automatically bring up the login screen.

If FORCED LOGIN is switched off, upon desk start the desk will automatically login the user who was last logged in.

## 2.16.10 Who is logged in at the moment?

- Go to the ***Tools*** menu.

- Look at the title bar of the window.

It says "***Tools*** Menue , current user is ...".

# 3 Creating a Show

## 3.1 CREATING A WINDOW

**1** Pressing an “empty” space on one of the three TFT displays or the external monitors. The CREATE A WINDOW menu will open.

### 3.1.1 Listing of individual windows and functions

#### Sheets:

CHANNEL: This window will display dimmer channels as figures. You have direct access to channels and values here. ➠ **3.5** Accessing Dimmer Channels directly

EXECUTOR: Within this window, you will have the option to display a sequence, which is assigned to an EXECUTOR fader or an EXECUTOR button. Among other options, this is where global times can be changed. ➠ **5.3** EXECUTOR window

FADER: Selected dimmer channels can be displayed as either bar or figure within this window. Here you will also have direct access to channels and values. ➠ **3.5** Accessing Dimmer Channels directly

FIXTURE: Displays all fixtures and their various functions, values, status etc. Here you will have direct access to the fixtures, functions and values. ➠ **3.4** Accessing Fixtures directly

TRACKING: In this window you can display a Sequence that is assigned to an EXECUTOR fader or EXECUTOR button. Here, as opposed to the EXECUTOR Sheet, all values or times can be displayed separately for an entire sequence. Cues are displayed vertically with channel and fixture data displayed horizontally. Any value/time can be modified separately for any channel. ➠ **5.4** TRACKING window

DMX: In this window, all DMX output channels are displayed as values, as they are actually patched. It is also possible to perform drag and drop patching operations from within this window. ➠ **2.10** DMX Output window

#### Pools:

GROUPS: Displays, creates new, edits and calls up fixture and dimmer groups. ➠ **3.3** Creating and Calling up Fixtures and Dimmer groups

SEQUENCE: In this Pool, all the created Sequences are displayed. This way, assignments to Executors can be made very quickly. Sequences can be renamed, copied and deleted from within this window as well. ➠ **5.1** ASSIGN menu

EFFECTS: Displaying and Calling up Effects. ➠ **6** Effects

FORMS: In this POOL, all created forms will be displayed. Here, you can rename, copy or delete forms. ➠ **6.7** Creating and Storing Virtual Forms (EDIT FORMS)

MACROS: In this Pool, all the created Macros are displayed. It is also possible to store new macros and edit existing ones from within this window. ➠ **8** Macros and QUIKEY

VIEWS: Displaying and Calling up Views. ➠ **3.2.2** View Pool

QUIKEY: Displaying and creating soft versions of existing console keys and commands. ➠ **8** Macros and QUIKEY

TIMECODE: Recording, Playing back, Editing and Storing SMPTE LTC Timecode controlled operations. ➠ **7.1** Timecode

MAtricks: Here, you can create, save and directly call up different selection groups. And you can copy or move values that were set by the Circular Copy function from one fixture to another. ➠ **3.9** MAtricks

Worlds: Here, you can create, call up or manage so-called „Worlds“. Worlds are important, when you e.g. want to work in the Multi-User Mode, or you just want to make some Fixtures „invisible“. ➠ **14.7** Worlds

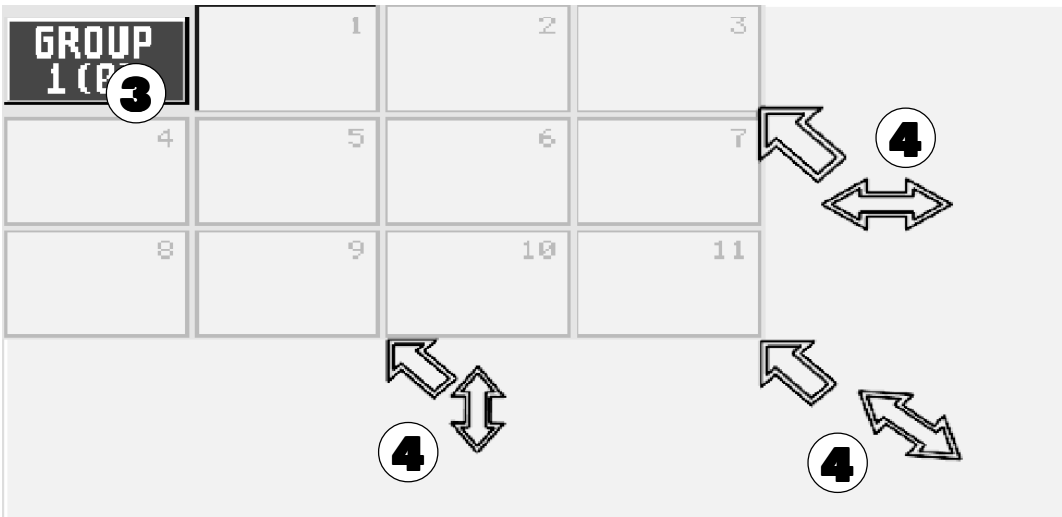
Channel Pages, Fader Pages, Button Pages: In these pools, “buttons“ will be displayed for all pages. The pages can be called up quickly by just clicking on them. Here, you can change the names of the pages, you can copy or delete them. ➠ **5.5** Managing Pages

## Presets:

| | |
|---|---|
| PAN / TILT, DIMMER, GOBO, COLOUR, BEAM, FOCUS, CONTROL, SHAPERS and ALL: | Creates new, edits and calls up individual PRESETS with name and number. ➠ **3.7** Creating and Calling up Presets |
| COMMAND LINE: | Lists executed commands by their names. Also to enter commands using the keyboard. ➠ **9.** Command Line |
| CLOCK: | Display window analog or digital clock. Switch by pressing the Analog button. |
| AGENDA: | In this menu, you can create automatic controls by time/date or sunrise/sunset. ➠ **8.3** Agenda menu |
| DESK STATUS: | Displays the current software versions:<br>VXWORKS: Operating system with date<br>GrandMA: Main program with date. If this line is displayed in green, the unit supports 4096 DMX channels<br>IO SUBSYSTEM: Program for the second built-in computer (Motorola) Internas, system load, etc. |
| Net Log: | (Presently, without any function) |
| Chat: | For communication (Chat) with other ***grandMA*** users in the network. |
| Stage: | To display a simplified stage model with all fixtures. In this window, the beam of light will only be displayed as a line. For Scanners having a color mixing unit or Dimmer channels, to which a color has been assigned, this beam of light represents the chosen color and its position. Additionally, fixtures can be selected directly by clicking on them.<br>➠ **2.2.3** Position of Fixtures and **2.2.5** Adjusting individual Fixture Groups, Assigning Colors for Dimmer channels |
| Clear Screen: | Will delete all windows on this display/monitor (but not the saved views) |
| **X**: | Will close this window discarding all changes. |

**2** Select the window to be created with a left mouse click.

**3** If you wish to move the newly created window, click and drag the window border.



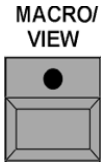

**4** There are 3 ways to enlarge or reduce a window: Move the cursor carefully to the lower or right border or corner, until you will see a small double-arrow next to the cursor. Now click and drag holding the left mouse key. By moving the mouse, the window can now be resized according to your requirements.

One of the most effective ways to work with the ***grandMA*** is by using the touchscreen and the encoder which is located next to each display.

### 3.1.2 Deleting a window

Press the DELETE key once. Right click on the title bar of the window.

**Or:**

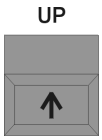


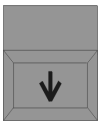

Click into the left corner (yellow dot) of the title bar. In the next window, confirm with YES or DELETE.

**Or:**

When pressing the top and bottom VIEW keys simultaneously, all windows on this TFT display will be deleted.

### 3.1.3 Scrolling with the UP and DOWN hard keys




Pushing the UP and DOWN hard keys will scroll a whole page up or down inside the menu or pool window that has the input focus (dark blue title).

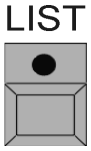
Pushing down the UP or DOWN hard key while holding down its opponent will scroll to the beginning or to the end.

If there is an active popup dialog on screen, the UP and DOWN hard keys work as UP and DOWN cursor keys for navigation inside the dialog.

### 3.1.4 Temporary Opening of Windows

Important windows can be opened temporarily and quickly on the right Display.

**This function is especially useful on the *grandMA* light and ultra-light.**




Hold the List key.

By additionally shortly pressing the function keys, the respective window will open and the function be switched off again afterwards:

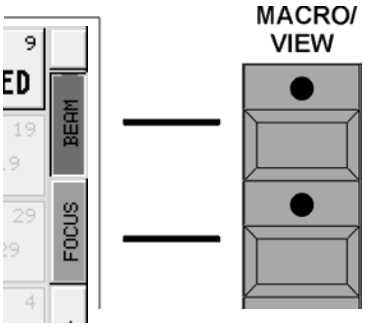
| | Press 1x | Press 2x | Press 3x |
|---|---|---|---|
| Channel | Channel-Sheet | Fader-Sheet | |
| Fixture | Fixture-Sheet | Stage window | |
| Group | Group pool | World pool | |
| Sequence | Sequence pool | | |
| Executor | Executor Sheet | Tracking Sheet | |
| Page | Channel Pages | Fader-Pages | Button Pages |
| Macro | Macro pool | | |
| Preset | all preset windows will be opened one after the other | | |
| View | View pool | | |
| Effect | Effect pool | Timecode pool | |

By pressing the ESC key, you can close the temporary windows at any time.

## 3.2 Storing VIEWS

The soft VIEW keys running down the righthand side of the touchscreens and external displays can be assigned with views.

The physical keys located beside the touch screens can be used for direct access to the VIEW soft keys on the screens.




What can a (soft) key be used for?

- You can store **one or more** displays on it,
- you can store **all** currently created windows on **all** screens and both external monitors on it,
- or you can store a Macro ➡ **8.1** Creating Macros

**1** Organize a display or monitor ➡ **3.1** CREATING A WINDOW

**2** Press the STORE key once (STORE LED is on).

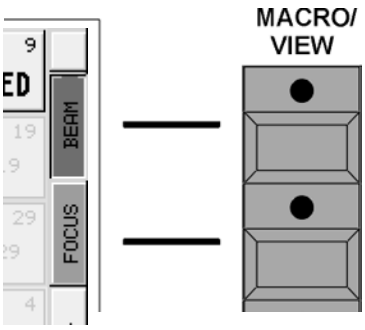
**3** Press a VIEW key or a VIEW soft key once. The SELECT VIEW window will open.

**4** Enter a name for the VIEW using the keyboard. The new name will be displayed in the top line.

**5** By pressing the keys 1–5 (selected key will turn dark-grey), you can select the display to be stored.

Pressing the key ALL SCREENS will store ALL displays on one view key.

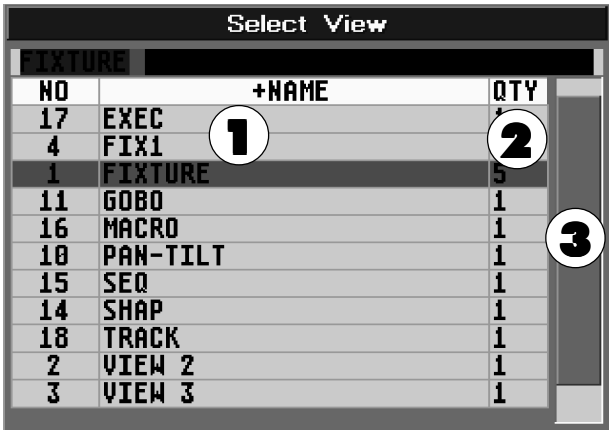
**6** With the OK or ENTER key you can complete the store and assign process.



## 3.2.1 Assigning VIEWS

All created views can by assigned to any view key.

Click on the view key with the right mouse key. The window SELECT VIEW will appear. In this window, make a left click on the VIEW you require:




**1** The table shows all created VIEWs.

**2** The QTY column shows the number of stored displays and external monitors for the individual VIEWs.

**3** Scrolling is possible by dragging the scrollbar on the right side.

**4** Selecting a VIEW in the table will assign this view to the chosen key.

## 3.2.2 View Pool

In the View Pool, all created Views are displayed and can be called up directly by selection.

# 3.3 Creating and calling up Fixtures and Dimmer GROUPS

Important and frequently used combinations of fixtures and dimmer channels can be stored in groups.

## 3.3.1 Creating fixture or dimmer groups

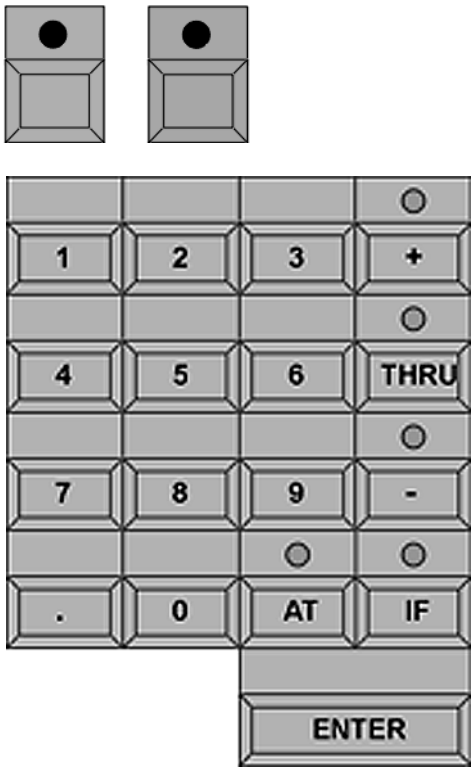
Create a GROUP window on one of the TFT touchscreens. ➠ **3.1** Creating a Window

- Use the touch screen or make a left mouse click on the individual Fixture within the FIXTURE SHEET or click on the Dimmer channels in the CHANNEL or FADER SHEET.

The Fixtures and / or dimmer channels that make up a group can be recalled one at a time in sequence. The order in which they are recalled is same as the order in which they were selected when the group was originally stored. When selecting Fixtures or Channels for a group, make use of their order so that you can step through them individually using the NEXT/PREV key.

**Or:**

FIXTURE CHANNEL

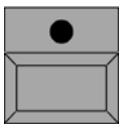



- Press the FIXTURE key for a fixture group or the CHANNEL key for dimmer groups (LED is on).

  Pressing the ENTER key will lock the Fixture or Channel in the Command Line.
- Enter the number of first fixture or dimmer channel, using the numeric keypad.
- Now you can select the next fixture or dimmer channel to be selected by using the "+" key.
- The THRU key on the numeric keypad will select a range. All fixtures and dimmer channels **from... to** including the last number entered.
- Using the "–" key, the fixture/dimmer channel with the number you input will **not** be selected.
- The selection can be confirmed with ENTER.

The **selected fixtures** or channels will be displayed in the FIXTURE or CHANNEL window in yellow characters.

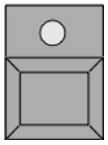
STORE



Press the STORE key once (LED within the key is on). Using the touchscreen or left mouse click, select the desired group key in the GROUP window on the display. The selected fixtures are now stored in this group (STORE LED is off).

You can now name this group using the keyboard. Enter the name or description and confirm with ENTER.

CLEAR



Press the CLEAR key once. This deselects the group of fixtures and dimmer channels.

For further groups, simply repeat the process.

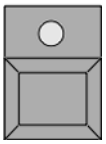
➠ **2.11** Creating presets, effects and group keys automatically

## 3.3.2 Calling up groups

Groups can be called up by:

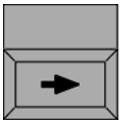
- A left mouse click
- Direct touch on screen
- Pressing the GROUP key once, entering the group number with the keyboard or keypad and confirming with ENTER.
- Press the GROUP key once. Pressing the ENTER key once will lock GROUP as preset in the Command Line. Then, enter the group number on the numeric keypad and call it up pressing ENTER.

CLEAR



By pressing the CLEAR key once, all selected Fixtures and Channels are deselected (no longer displayed in yellow).

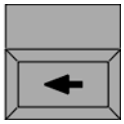
Proceed as follows to separately activate selected Fixtures/Dimmers or called-up groups in the desired/stored order:



NEXT

NEXT key once within a group or selection: forwards

PREV



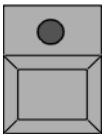
PREV key once within a group or selection: backwards

Pressing the SET key once reselects all Fixtures and dimmer channels in the group.

If there are more groups than can be displayed in the GROUP window, you can scroll down within every “active“ window (title bar in dark blue) on every screen, by using the encoder wheel on the right of the respective touchscreen or the up/down key.

## 3.3.3 Moving GROUP keys within a window

MOVE

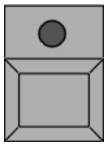


Press the MOVE key once (MOVE LED lights up).

Using the touch screen or left mouse key, click on the GROUP key and hold it down (a small hand appears). Drag the key to another location within this window and then release it.

You can also insert Group Keys.

MOVE

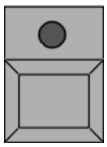


Press the MOVE key twice (LED is blinking).

Using the touch screen or left mouse key, click on the GROUP key and hold it (a small hand appears). Move the key to required position between the other keys in this window and release it. All following keys will be moved by one position to the right.

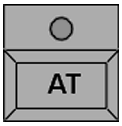
## 3.3.4 Copying groups

COPY



Press the COPY key once (LED is on).

Select the Group Keys in the GROUP window. By selecting several groups one after the other, that set of groups can be copied together.




Press the AT key once (LED is on).

Click on the position for the copied group in the GROUP window.

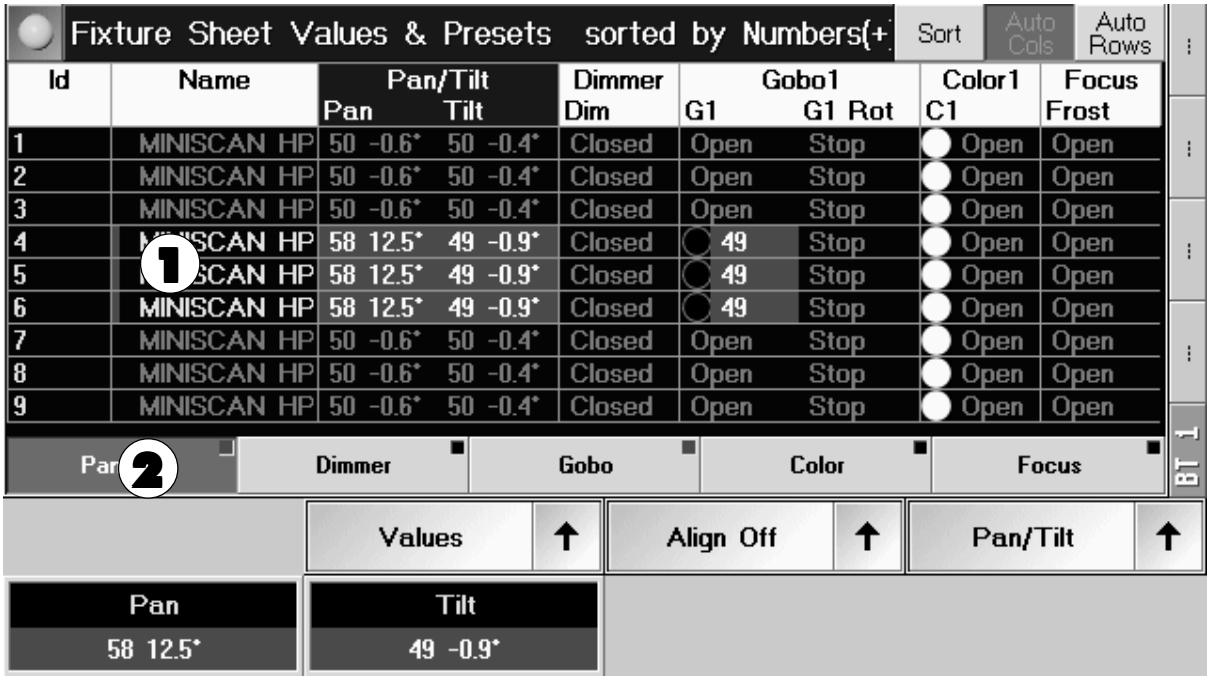
Confirm with ENTER.

The functions Move, Copy or Delete can also be used for Executors, Pages, Sequences or Effects.

## 3.4 Accessing Fixtures directly (in the FIXTURE SHEET)

Individual fixture functions can always be accessed directly and multiple fixtures can be controlled at the same time. The selection will determine which fixtures react to Direct Access procedures (selected fixtures will be marked in yellow writing in the FIXTURE window).

Within the FIXTURE window, you can locate, select and execute all functions for all fixtures.




**1** Select the fixtures, where you wish to modify a value (the selected fixtures will be displayed in yellow characters).

Selection:

- Call up a fixture group. ➡ **3.3** Creating and calling up Fixtures and Dimmer GROUPS

**or:**

- Select fixtures using the touchscreen.

**or:**

- Select fixtures by using the Fixture key and the numeric keypad. ➡ **3.3** Creating and calling up Fixtures and Dimmer GROUPS

**or:**

- A left mouse click on the individual fixtures.

**2** Select the requested function by clicking on the relevent key on the Preset Control Bar. Switch on the Preset Control Bar ➡ **3.4.8** Options in the Fixture Window.

Values can now be changed via the encoders, located below the right TFT display (all functions of the encoders will be displayed directly on the screen).

The various functions can now be toggled by pressing the FEATURE key.

**or:**

The Trackball affects the PAN/TILT function only (if switched to Pan & Tilt).

**or:**

The wheel affects dimmer values only.

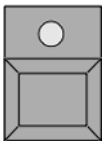
**or:**

Any value may be altered by clicking and holding on it with the middle mouse key and moving the mouse.

For storing settings ➡ **4** Cues and Sequences
For creating Presets ➡ **3.7** Creating and calling up Presets
To call up or create Effects ➡ **6** Effects

If you wish to modify the selection **or** the activated values of the fixtures:

CLEAR



- Press the CLEAR key:

  When pressing the CLEAR key the **first** time, the selection of fixtures will be deselected from the OUTPUT window (yellow characters turn grey).

The **modified** (active) values will be kept and displayed with red background.

- Press the CLEAR key again:

  When pressing the CLEAR key the **second** time, the activation of modified values will be canceled (they will no longer have a red background).

- Press the CLEAR key one more time:

  When pressing the CLEAR key the **third** time, all modified values will be reset (default or to their original setting prior to the activation).

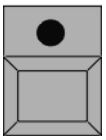
---

After pressing the CLEAR key for the first time, the yellow LED in this key will flash. This means that only the selection was deleted. When you select other fixtures or dimmer channels now, the yellow LED will no longer flash.

---

The selection of single fixtures can also be deleted.

OFF

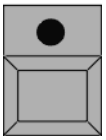


Press OFF key 1 x (LED is on).

Click on the Fixture key in the Group Window or on the Fixture Name in the Fixture Sheet.

You can also deactivate parameter values of individual fixtures (Output will be set to Default or to an outputing cue value).

OFF

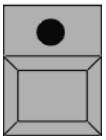


Press OFF key 1x (LED is on).

Click on the activated value in the Fixture Sheet.

You can also delete activated values of entire function groups of selected fixtures (Output will be set to Default of activated cue value).

OFF



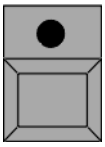
Press OFF key 1x (LED is on).

Press a key for the respective function on the Preset Control Bar or click on that function within the Fixture Sheet.

## 3.4.1 The ALIGN Function

The ALIGN function allows you to apply ratios to ranges of parameters. Four different **modes** are available.

ALIGN



ALIGN key pressed once (LED is on).

When changing the activated values, the value of the ***first*** selected Channel/Fixture will be taken as the starting value (will not be changed), while the value of the last selected Channel/Fixture value will be the one modified most, and all values in between will be distributed evenly.

ALIGN key pressed twice (LED is on).

When changing the activated values, the value of the ***last*** selected Channel/Fixture will be taken as the starting value (will not be changed), while the value of the first selected Channel/Fixture will be the one modified most, and all values in between will be distributed evenly.

ALIGN key pressed 3 times (LED is on).

When changing the activated values, the value of the selected Channel/Fixture(s) ***"in the middle"*** will be taken as the starting value (will not be changed). The value of the ***first*** and ***last*** selected Channel/Fixture will be the ones modified most, and all values in between will be distributed evenly.

ALIGN key pressed 4 times (LED is on).

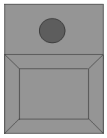
When changing the activated values, the ***middle*** value will be the one modified most, the values of the ***first*** and ***last*** will not change, and the values in between will be distributed evenly.

## 3.4.2 PAUSE Function

With the Pause Function you can temporarily freeze (park) entire fixtures or just individual parameters of fixtures. After the activation of the Pause Function, no further changes will be output by the console. But you can still change and store fixtures or single functions internally.

You can park single fixtures with all parameters. Parked fixtures are displayed by a blue bar on the side of the name and all functions.

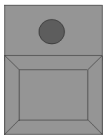
Press PAUSE key 1x (LED is on).



Click on fixture or fixture key in the Group Window or click on fixture in the Fixture Sheet.

You can also park single parameters of the fixtures. Parked parameters are displayed by a blue bar on the side of the name and all functions.

Press PAUSE key 1x (LED is on).

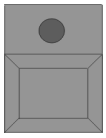


Click on the functions in the Preset Control Bar (Switch on Preset Control Bar ➠ **3.4.8** Options in the Fixture Window) or directly on the parameters in the Fixture Sheet.

## Park Function

Parked fixtures, functions or parameters can be released again either individually or together.

**GO +** Press GO+ key 1x (LED is on).



Click on fixture or fixture key in the Group window or click on fixture in the Fixture Sheet.

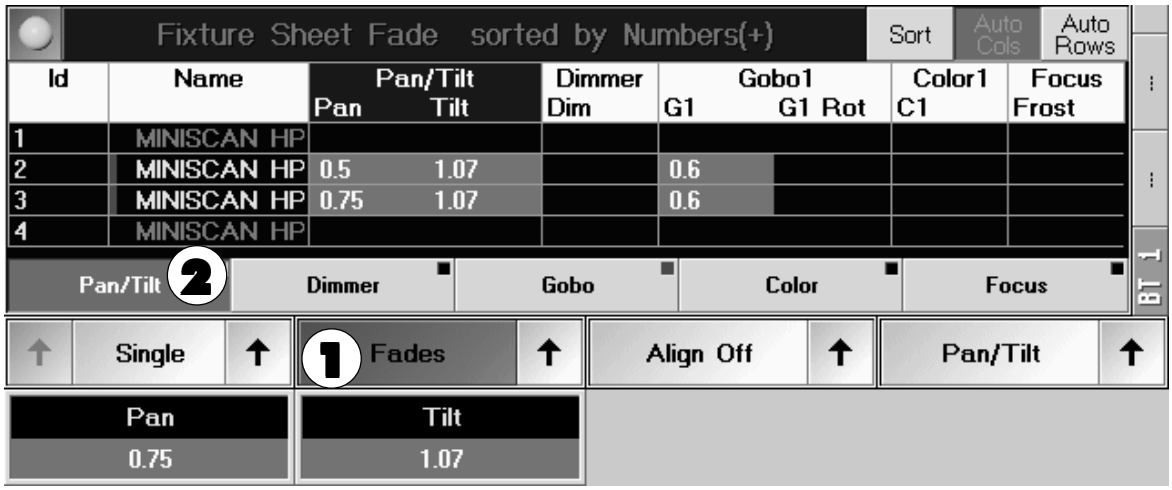
**or:**

Click on the functions within the Preset Control Bar or directly on the parameters in the Fixture Sheet.

### 3.4.3 FADE and DELAY times in the FIXTURE window

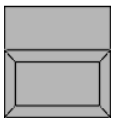
**Additionally** to the standard (Basic) FADE and DELAY times, individual durations can also be set for the individual parameters in the FIXTURE window.

You will need these settings when creating Cues, in order to be able to work with different FADE or DELAY times for individual parameters.




**1** Press the Values/Fades/Delays key as displayed above in the „Fades“ picture.

TIME



When you press the TIME key once, the fixture sheet will switch to **FADE** time mode. The second time, the fixture sheet will switch to DELAY time mode.

If in the windows options Automatic has not been selected, the display will not switch over. The currently selected FADE or DELAY function will be displayed only for the Encoder labels. ➡ **3.4.8** Options in the Fixture window

**2** Choose a function, where you wish to program a time, other than the Basic time.

Now you can modify the IND. FADE time or IND. DELAY time (individual Fade/Delay Times) for the selected fixtures using the encoders. While modifying, you can use different options.

## Choosing options:

Above the left Encoder, a second additional button with the currently chosen option will be displayed.

By pressing this button, you can select the respective next option.

**Or:**

By pressing the right arrow, a menu will open, in which all options are displayed and can be chosen directly.

Single (For Active): The time can be adjusted for each individual Function (Attribute). If “Single For Active“ is chosen, only times for activated values can be changed.

Feature (For Active): The time can be adjusted for the chosen Feature (e.g.: Gobo1, containing e.g.: Gobo1 and Gobo1 Rotation). If “Feature For Active“ is chosen, only times for activated values can be changed.

All (For Active): All times for all Attributes are adjusted. If “All For Active“ is chosen, only times for activated values can be changed.

Defined (For Active): The time can be adjusted for the fixed Attributes. Pressing the left arrow on the side of the Defined button will open the “Define Attributes to Set Time“ menu.
**Selecting individual Attributes:**
In this menu, all Attributes are displayed with a green (selected) or black (deselected) background. Pressing on one of the functions will select or deselect it, respectively.

### 3.4.4 Deactivating values individually

Before storing, it is possible to select which parameters of which fixtures are to be stored. Values that are to be stored are indicated by a red background or by red numbers.

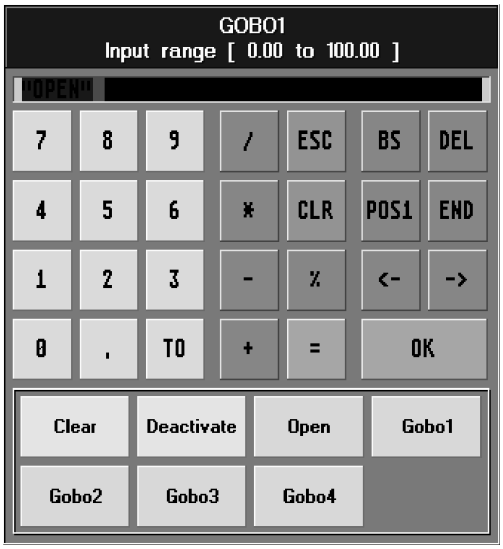
By default, parameters within functions are partly activated together. ➡ **2.4.2.** Encoder (Activation) Grouping

In order to split the activation for a function, press Edit key and touch on the **set activation** (red background) **before storing** it.

This will open the **input** window.

The title bar will display the chosen function (Attribute).

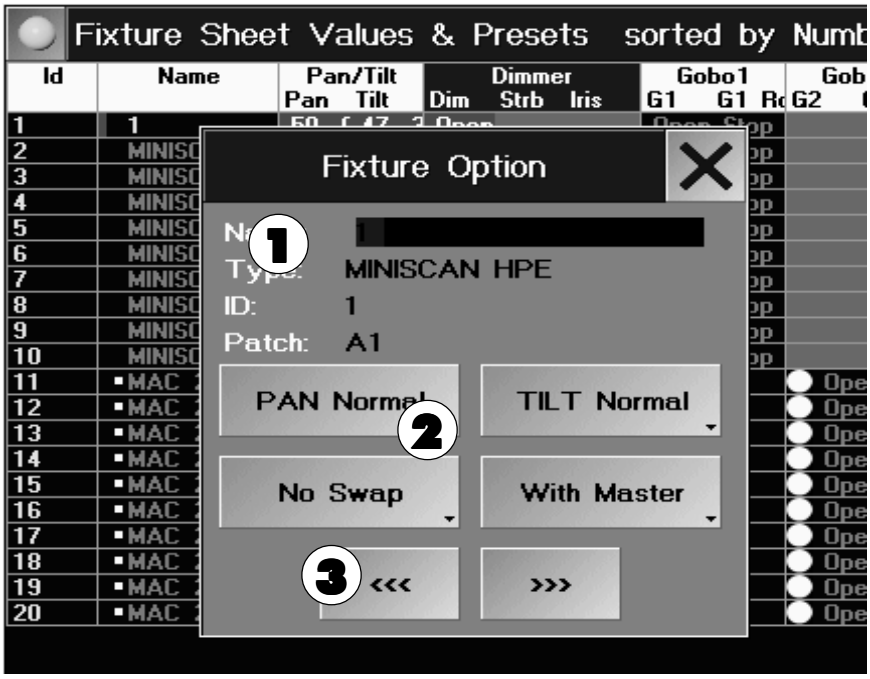
Pressing the Deactivate button will cancel the activation of this function.



## 3.4.5 FIXTURE OPTION

In the Fixture Sheet, you can adapt different basic settings for each individual Fixture.

Edit key and touch on a Fixture and the FIXTURE OPTION window will open.




**1** The Fixture can be renamed using the keyboard.

Next to Type the type of Fixture is displayed, next to ID: the corresponding number, and next to Patch the start address for this Fixture.

**2** Pressing the PAN NORMAL key (display changes to PAN INVERSE) will invert the output of the PAN parameter.

Pressing the TILT NORMAL key (display changes to TILT INVERSE) will invert the output of the TILT parameter.

Pressing the NO SWAP key (display changes to SWAPPED) will swap the output of the PAN and TILT parameters so that the Pan parameter on the console controls the tilt of the fixture and vice versa.

Pressing the WITH MASTER key (display changes to NO MASTER will be indicated by a dark blue background), the Dimmer value will be output without regard to the level of the GRANDMASTER.

If a Fixture was modified in this window, the Fixture's name will be displayed on a blue background in the Fixture Sheet. These changes can also be set while patching Fixtures. ➠ **2.5** Selecting DMX addresses for Fixtures

**3** With the <<< key, you can switch to the previous Fixture. With the >>> key, you can switch to the next Fixture.

With the X key, you can close the window.

### 3.4.6 AUTO-SORT Function in the FIXTURE Window

Pressing the „Auto Cols“ key (dark background) will move the function column, for which the value is currently being changed, automatically to the left.
Selecting Presets **or** functions in the Preset Window (➠ **3.7** Create Presets) will move the respective column in the Fixture Window to the left.

Pressing the „Auto Rows“ key (dark background) will move up those fixtures, selected via groups or directly by fixture key and numeric keypad.

### 3.4.7 SORT Function in the FIXTURE Window

Pressing the SORT key will update the sorting (➠ below) in the Fixture Window.

### 3.4.8 Options in the FIXTURE Window

Touch the touch screen on the left corner of the title bar (yellow dot).

**Or:**

Right click with the mouse on the headline bar.

The NEW FIXTURE SHEET OPTIONS window will open.

If pressing the Sorting & Readout button (displayed with a green font):

Layer Display: By pressing the respective function, the following values will be displayed as basic setting.

- Preset and Values: The FIXTURE window will show presets or values if no presets are used.
- Fades: FADE times will be displayed.
- Delays: DELAY times will be displayed.
- Values Only: Only values (without presets) will be displayed, but no effects and profiles.
- Output: The DMX output values will be displayed, but without taking any profiles into account!
- Executor ID: The Executor’s number and page will be displayed.
- Cue ID: The sequence’s number and the respective Cue will be displayed.
- Automatic: If this key is pressed, the display will automatically toggle between the different options when toggling with the TIME key.

Layer Control: If “On“ is chosen, a control bar appears below the Scanners. By pressing on the individual buttons on the control bar, the display in the window will be switched accordingly.

Preset Control: If “On“ is chosen, a control bar appears below the Scanners. For each function, there is a separate button. By pressing on the individual buttons on the control bar, the appropriate function will be activated and can be modified using the Encoders.
In the right upper corner of each button, you’ll find a small square. If this square has a black background, the respective function has not been modified. If the background is red, something has been changed in this function.
If pressing the Sorting & Readout button (displayed with a green font):

Sort by:

With the respective key, you can determine according to which criteria the fixtures within the column are to be sorted.

- Numbers: Fixtures will be sorted by numbers in the FIXTURE window.
- Names: Fixtures will be sorted by name.
- Selected: The **selected** Fixtures will be moved upwards.
- Active: Fixtures for which a value is **activated**, will be moved upwards.

Sort Directions:

- Values: Fixtures will be sorted according to highest dimmer value.
- Sort Upwards: Sorting by ascending values.
- Sort Downwards: Sorting by descending values.

READOUT: Pressing this function, you can switch between the following display options.

- Percent: Values will be displayed as percentages.
- Percent +: Values will be displayed as percentage values; interim values will be displayed next to the figure in form of 3 dots.
- Decimal: Values will be displayed as decimal numbers (0–255).
- HEX: Values will be displayed as hexadecimal numbers (0–FF).

FONT: By pressing this function, you can switch the font size in the FIXTURE window between Huge (very big), Big and Small.

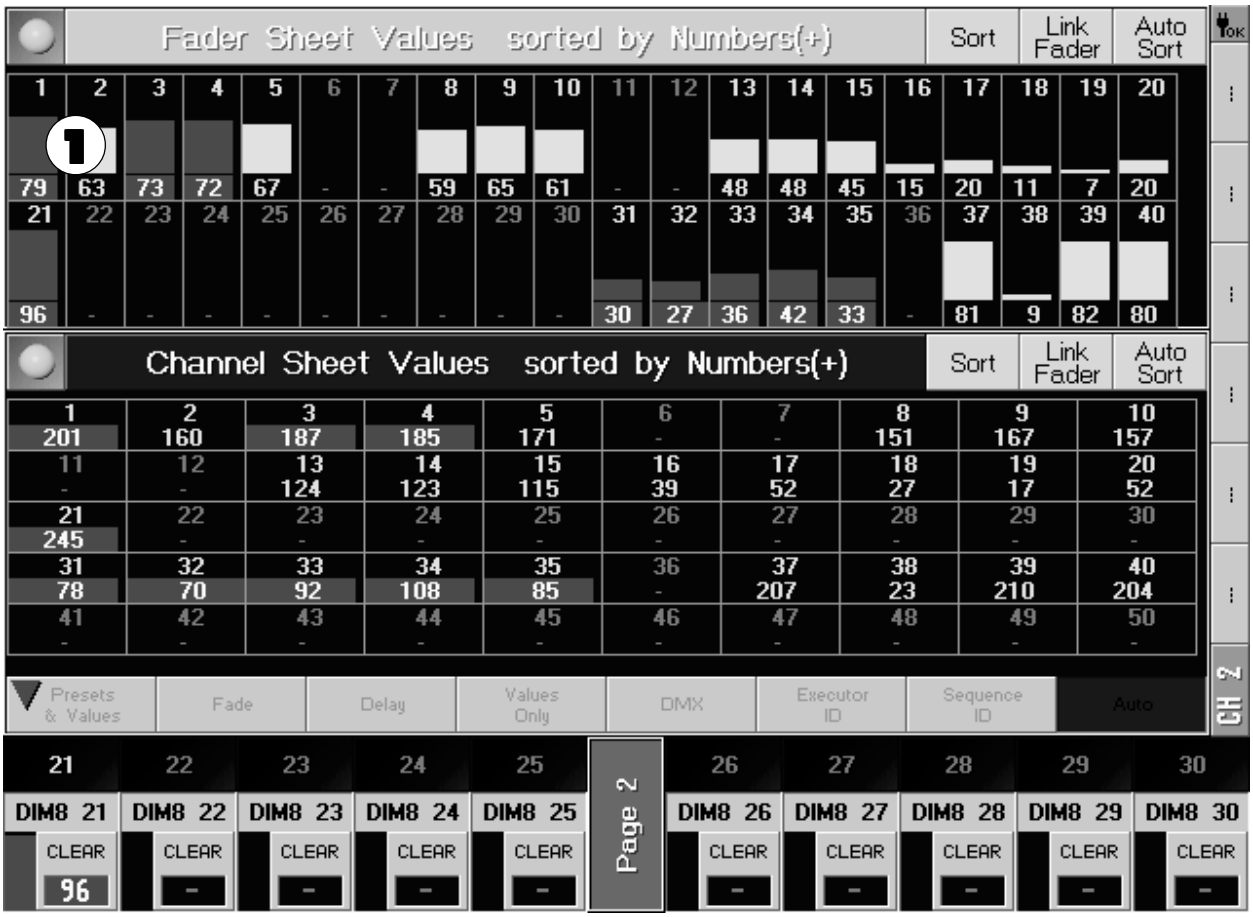
This window can be deleted by pressing the DELETE WINDOW key.

Pressing the X key will close the Option Window.

These settings will all be stored when VIEWS are stored (➠ **3.2** Storing VIEWS).

## 3.5 Accessing Dimmer Channels directly (in the CHANNEL SHEET)

The individual dimmer channels can be accessed directly at any time.




**1** Select the channels, which you wish to modify (selected channels will be displayed in yellow characters).

Selection:

- Select a dimmer group. ➠ **3.3** Creating and calling up Fixtures and Dimmer GROUPS
  **Or:**
- Select dimmers via the CHANNEL key and the numeric keypad. ➠ **9** Command Line

  **Or:**
- With Touchscreenn or a left mouse click on the individual channels.
  **Or:**
- Make a left mouse click on the first channel and drag with the mouse holding the left mouse key down (creates a **Loop**), all channels **in this loop** are **selected**.

**2** Values can be modified with the encoders (Encoder assignment is displayed on the screen above) or with the wheel.

**Or:**

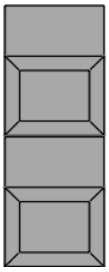
By direct entry into the Command Line (AT functions) you can also enter dimmer values ➠ **9** Command Line

**Or:**

Select channels with a left mouse click and **hold** middle the mouse key down and drag; the value will be modified.

## 3.5.1 CHANNEL Mode

CHANNEL FADER

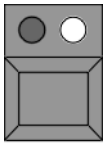


Activate the CHANNEL Mode with the CHANNEL FADER keys this will toggle your executor faders so that they are now channel faders.

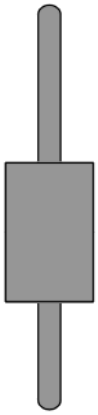
The assignment of Channels and Faders can be changed via the CHANNEL FADER keys (for example: 1–20, 21–40, etc.).

The assignment of a channel number to a Fader is listed on the TFT displays above the faders.

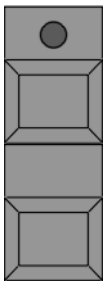
By pressing the indiviual CLEAR keys above each fader on the touch screen individual channels, which have been modified manually, can be deselected and deactivated.



The respective channel can be selected using the physical key above the Fader.



In CHANNEL mode, the individual channel values can be set with the Faders.

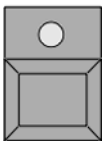


The respective channel can be hidden using the physical key under the Fader.

In the TFT displays above the Faders, the assignment of channel numbers and Faders will be displayed along with any names that have been given to individual channels.

In order to modify the selection **or** the active values of dimmer channels:

CLEAR



- Press the CLEAR key:

  When pressing the CLEAR key the **first** time, the selection of dimmer channels will be deselected from the OUTPUT window (yellow characters turn grey).

The **modified** (active) values will be kept and displayed with red background.

- Press the CLEAR key again:

  When pressing the CLEAR key the **second** time, the activation of modified values will be canceled (they will no longer have a red background).

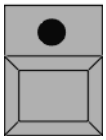
- Press the CLEAR key one more time:

  When pressing the CLEAR key the **third** time, all modified values will be reset (default or to their original setting prior to the activation).

After pressing the CLEAR key for the first time, the yellow LED in this key will flash. This means that only the selection was deleted. When you select other fixtures or dimmer channels now, the yellow LED will no longer flash.

You can also deactivate values of single dimmer channels .

OFF



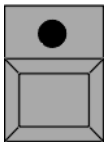
Press OFF key 1x (LED is on).

Press a key for the respective function on the Preset Control Bar or click on that function within the Fixture Sheet.

## 3.5.2 ALIGN Function

The ALIGN function allows you to apply ratios to ranges of values. Four different **modes** are availible.

ALIGN



ALIGN key pressed once (LED is on).

When changing the activated values, the value of the ***first*** selected Channel/Fixture will be taken as the starting value (will not be changed), while the value of the last selected Channel/Fixture value will be the one modified most, and all values in between will be distributed evenly.

ALIGN key pressed twice (LED is on).

When changing the activated values, the value of the ***last*** selected Channel/Fixture will be taken as the starting value (will not be changed), while the value of the first selected Channel/Fixture will be the one modified most, and all values in between will be distributed evenly.

ALIGN key pressed 3 times (LED is on).

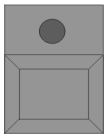
When changing the activated values, the value of the selected Channel/Fixture(s) ***"in the middle"*** will be taken as the starting value (will not be changed). The value of the ***first*** and ***last*** selected Channel/Fixture will be the ones modified most, and all values in between will be distributed evenly.

ALIGN key pressed 4 times (LED is on).

When changing the activated values, the ***middle*** value will be the one modified most, the values of the ***first*** and ***last*** will not change, and the values in between will be distributed evenly.

## 3.5.3 PAUSE Function

With the Pause Function you can temporarily freeze (park) dimmer channels•. After the activation of the Pause Function, no further changes will be output by the console. But you can still change and store dimmer channels internally.

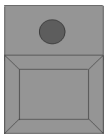


Press PAUSE key 1x (LED is on).

Click on Dimmer key in the Group Window or click on dimmer channels in the Channel or Fader Sheet. Parked dimmer channels will be displayed with a blue bar.

Parked dimmer channels can also be released either entirely or separately.

GO +



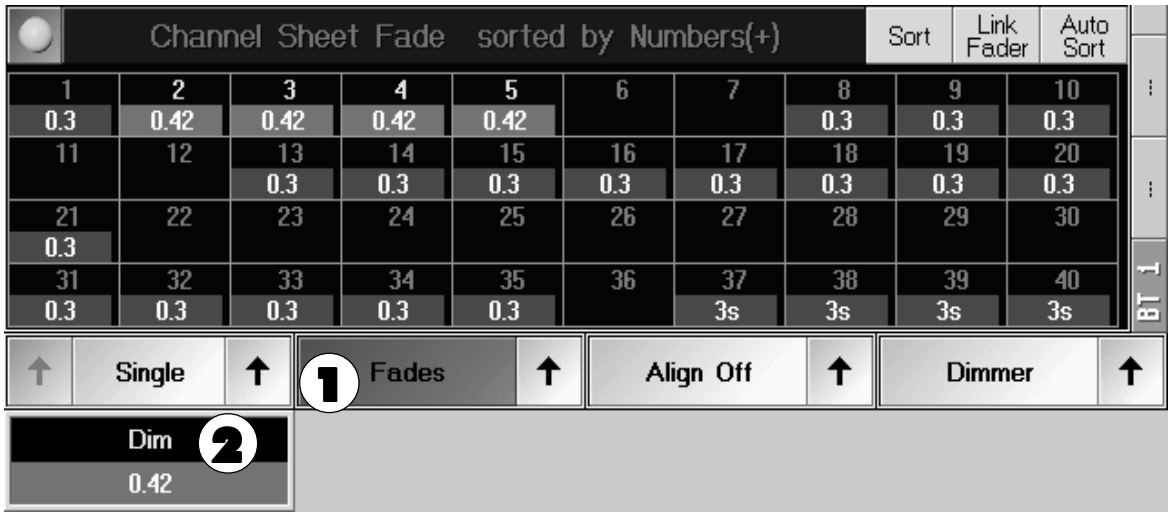
Press GO+ key 1x (LED is on).

Click on dimmer key in the Group window or click on dimmer channels in the Channel or Fader Sheet.

## 3.5.4 FADE and DELAY times in the CHANNEL window

**In addition to** the standard (basic) FADE times, individual durations can also be set for the individual functions in the CHANNEL window (not in the FADER CHANNEL window).

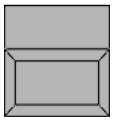
These settings are needed when creating Cues, so that you can work with different FADE or DELAY times for individual channels.




**1** Press Values, so that the button displays Fades or Delays.

**Or:**

TIME



When pressing the TIME key once, this will switch the channel sheet to the **FADE** time mode. The second time, this will switch the channel sheet to the DELAY time mode.

If in the Window options Automatic was not selected, the display will not switch over. The currently selected function of the FADE or DELAY Command Line will be displayed only for the Encoder labels.
➠ **3.5.7** Options within the CHANNEL window

**2** Now you can modify the IND. FADE or IND. DELAY time for the selected dimmer channels using the left encoder (Individual Fade/Delay Time).

When carrying out modifications, different options can be used. These options can be necessary when times for Scanners and Dimmers are changed simultaneously.

### Selecting options:

Above the left decoder, a second additional button will be displayed showing the currently selected option.

By pressing this button, you can select the next option available.

**Or:**

Pressing on the right arrow will open a menu, in which all options are displayed and can be selected directly.

Single (For Active): The time can be adjusted for each individual Function (Attribute). If “Single For Active“ is chosen, only times for activated values can be changed.

Feature (For Active): The time can be adjusted for the chosen Feature (e.g.: Gobo1, containing e.g.: Gobo1 and Gobo1 Rotation). If “Feature For Active“ is chosen, only times for activated values can be changed.

All (For Active): All times for all Attributes are adjusted. If “All For Active“ is chosen, only times for activated values can be changed.

Defined (For Active): The time can be adjusted for the fixed Attributes. Pressing the left arrow on the side of the Defined button will open the “Define Attributes to Set Time“ menu.

### Selecting individual Attributes:

In this menu, all Attributes are displayed with a green (selected) or black (deselected) background. Pressing on one of the functions will select or deselect it, respectively.

### 3.5.5 Link Fader-Function in the CHANNEL window

If the Link Fader function is activated, paging through in CHANNEL Mode will keep the current fader range in the Channel / Fader sheet

### 3.5.6 AUTO-SORT-Function in the CHANNEL window

If the AUTO-SORT-function is activated (key has a black background), the selected channels in the CHANNEL window will automatically be moved to the left and upwards.

Using AUTO-SORT in conjunction with Link-Fader allows channel selections to be transferred to the faders when in channel mode (➡ CHANNEL mode).

### 3.5.7 Options within the CHANNEL or Fader window

Touch the touch screen on the left corner of the title bar (yellow dot).

**Or:**

With a right mouse click on top line the CHANNEL SHEET OPTIONS window will open.

The Channel or Fader Sheet Options window will open.

The Display button must be pressed (displayed with green font).

Layer Display (only Values and Outputs in the FADER CHANNEL window possible):
By pressing the respective keys, the following basic values will be displayed:

- Values only: Values are displayed.
- Fades: FADE times will be displayed.
- Delays: DELAY times will be displayed.
- Output: The DMX output values are displayed.
- Executor ID: The Executor's number and page are displayed (only valid for Executor keys).
- Cue ID: The Sequence's number and respective Cue are displayed (only valid for Executor keys).
- Automatic: If this key is pressed, the display will automatically swap in this window when using the TIME key.

Layer Control: If "On" is chosen, a control bar appears below the Scanners. By pressing on the individual buttons on the control bar, the display in the window will be switched accordingly.

Preset Control: If "On" is chosen, a control bar appears below the Scanners. For each function, there is a separate button. By pressing on the individual buttons on the control bar, the appropriate function will be activated and can be modified using the Encoders.
In the right upper corner of each button, you'll find a small square. If this square has a black background, the respective function has not been modified. If the background is red, something has been changed in this function.

The Sorting & Readout button must be pressed (displayed with a green font).

Sort by:
With the respective key, you can define the channels' sorting order in the window.

- Numbers: Within the CHANNEL window channels are sorted by numbers.
- Names: Channels will be sorted by name.
- Selected: The **selected** channels will be moved to left/above.
- Active: Channels for which a value is **activated**, will be moved upwards.
- Values: Channels will be sorted by highest value.

Sort Direction:

- Sort Upwards: Sorting by ascending numbers.
  Sort Downwards: Sorting by descending numbers.

Readout:
By pressing this function, you can choose the display criteria for the values.

- Percent: Values will be displayed as percentages.
- Percent+: Values will be given as percentage values; interim values will be displayed next to the figure in form of dots.
- Decimal: Values will be given as decimal numbers (0–255).
- HEX: Values will be given as hexadecimal numbers (0–FF).

Font:

By pressing the function, you can switch the font size in the Channel or Fader window between Huge (very big), Big and Small.

The Settings button must be pressed (displayed with a green font).

Orientation:
By pressing this function, you can choose between sorting the channels from left to right or from top to bottom.

Wrap Around:

If "On" has been selected, the size of the Channels will be adjusted automatically, when the number of Channels changes.

Namefield:

If "On" has been selected, the Channel names are displayed.

Column:

The figure indicates, how many channels will be displayed in one column. Clicking on that figure, you can enter a new number via keyboard; confirm with ENTER. The new number will automatically be taken over.

The Channel window can be deleted by pressing the Delete Window key.

By pressing the X key, the Option window will be closed.

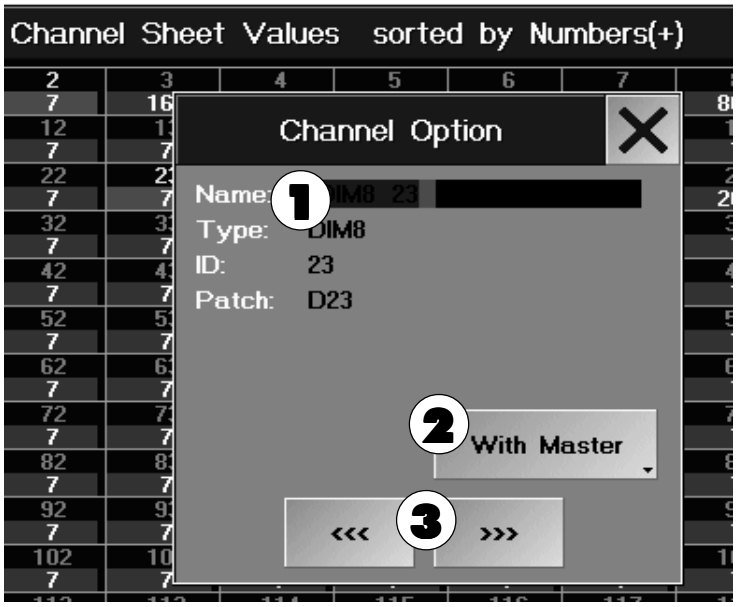
All these settings (excl. "LINK") will be stored when storing the VIEWS ( ➡ ***3.2*** Storing VIEWS).

## 3.5.8 DIMMER OPTION

In the Channel Sheet, you can adapt different basic settings for each individual Dimmer channel.

Press Edit key and choose the channel on the Touchscreen.

The CHANNEL OPTION window will open.




**1** The Dimmer channel can be renamed using the keyboard.

Next to 'Type' the type of Dimmer is displayed, next to 'ID' the corresponding number, and next to 'Patch' the DMX address for this Channel.

**2** Pressing the WITH MASTER key (display changes to NO MASTER, will be indicated by a dark blue background), the Dimmer channel will be output without regard to the GRANDMASTER.

If a Dimmer channel was modified in this window, the Dimmer channel's number or name will be displayed on a blue background in the Channel Sheet.

These modifications can also be defined while patching Dimmer channels. ➡ **2.2.2** Selecting DMX addresses for Dimmers

**3** With the <<< key, you can switch to the previous Dimmer channel. With the >>> key, you can switch to the next Dimmer channel.

With the X key, you can close the window.

## 3.6 Colours used in the FIXTURE, CHANNEL and FADER window

| Input or Function | Status | Channel number/ Attribute | Dimmer Channel Value | Fixture Attribute Value |
|---|---|---|---|---|
| Channel or attribute not used, or released 3x CLEAR, not Activated | not selected, no value | gray | gray | gray |
| Not selected, but value from any Executor | not selected, but output value >0% | gray | yellow | yellow |
| Dimmer not selected, last cue on Master Sequence did not change the value | not selected, but output value >0% | gray | blue-green | yellow |
| Dimmer not selected, last cue on Master Sequence decreased the value (DOWN) | not selected, but output value >0% | gray | green | yellow |
| Dimmer not selected, last fade on Master Sequence increased the value (UP) | not selected, but output value >0% | gray | magenta | yellow |
| Not selected, last change was manual | not selected, but manual changed | gray | White on dark-red background | White on dark-red background |
| Manual selection, | selected, but not active | yellow | gray | gray |
| Manual Activation or changed by Fader or Encoder | active | yellow | white on red background | white on red background |
| Selection deleted by CLEAR key | not selected, not active, but selected | gray | White on dark-red background | White on dark-red background |
| Activation deleted by CLEAR key | not selected, but manually changed | grey | white | white |
| Not selected, but value from any Executor (except Master) | only output | grey | yellow | yellow |
| Not selected, but Preset activated | not selected, value fromPreset | gray | Turquoise on dark-red background | White on dark-red background |
| Selected, after Preset was activated | selected, value fromPreset | yellow | Turquoise on red background | White on red background |
| Activation deleted by CLEAR | Not selected, value from Preset | gray | White on tur-quoise background | White |

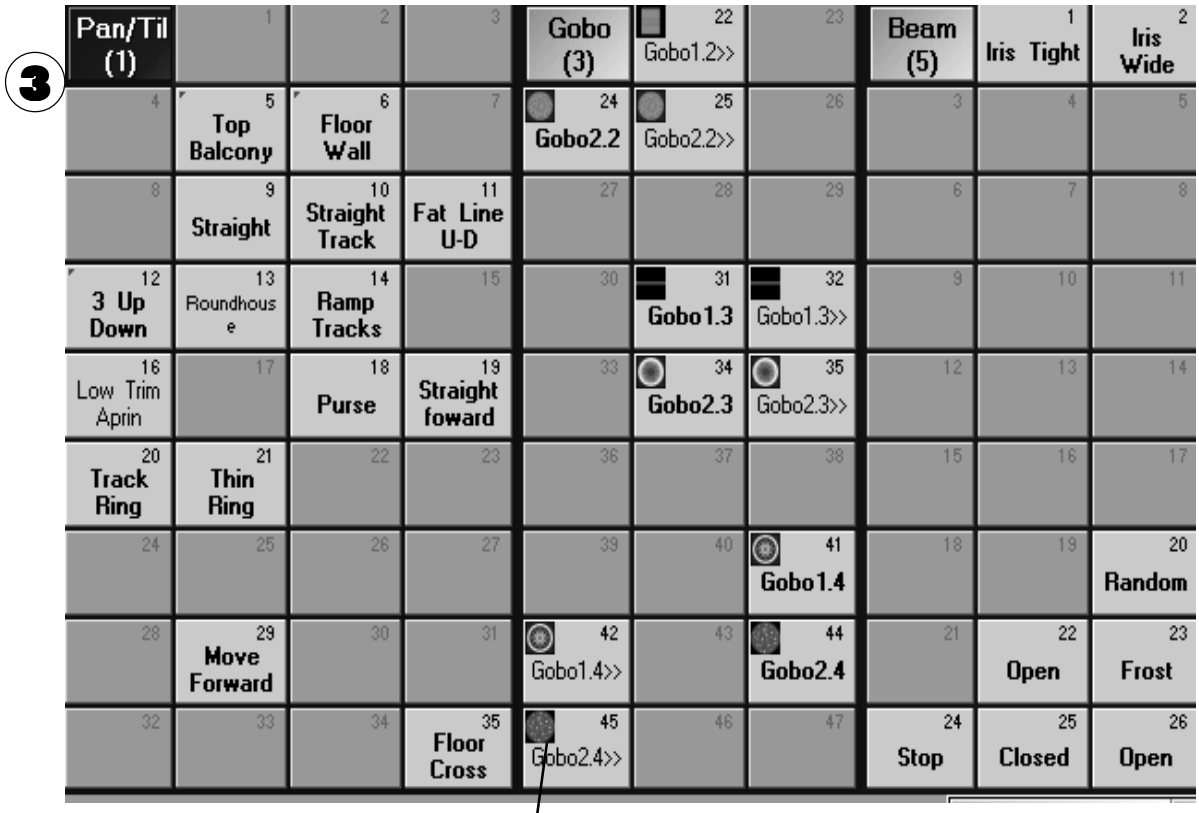
# 3.7 Creating and calling up Presets

There are certain values for the functions of fixtures, which will be needed again and again, for example the values for individual colours of the color wheel. These values can be programmed as presets in the respective PRESET window and then be reselected.

If you have presets for the fixtures be created automatically (CREATE PRESETS), these pre-recorded presets will be available in the respective windows. ➠ **2.11 Creating Presets automatically**

**1** Create a window for all presets you want to use - select them from preset-pools.

**2** In the GROUP window, select those fixtures, for which you want to create a Preset, by a touch or mouse click (fixtures have to be displayed in yellow in the FIXTURE window).



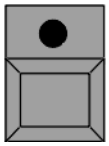

Ikons of the gobos are only displayed, when lamps are loaded from library

**3** Select the Preset group for which you want to create a Preset on the display, using the Touchscreen or by a left mouse click on the title bar. For example: In the Preset window PAN/TILT.

Values and positions can be changed by:

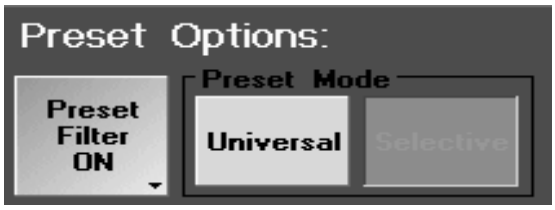
- Encoders (all functions and the assignment will be displayed on the right display above the encoders),
- Trackball (only PAN /TILT), if activated,
- Level Wheel (only for dimmer values),
- Middle mouse key (left click on a value in the FIXTURE or CHANNEL window; drag the mouse while holding the middle mouse key will change the value).

## TRACKERBALL ON/OFF



- Switch on the Trackball by pressing the TRACKBALL ON button (the integrated LED must be on). Now you can control the selected fixtures via the trackball (PAN/TILT) . Changed (active) values will be displayed in the OUTPUT window by a red background colour.

- Push the STORE key and ***hold***. The following selection appears on the right TFT-Display:




**There are two types of Presets:**

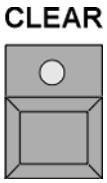
Selective: Can only be used for those Scanners, for which it was saved. Will be indicated by a red triangle in the left upper corner of the saved Preset button.

Universal: Can be used for all Scanners of the **same** type, even if not all will be saved.

Additionally you can store presets including several functions on one key. These presets can be created in any preset group. Preset Filter ON: only the functions (Attributes) of this Preset group will be stored into this preset; with Preset Filter OFF, all currently active functions will be stored into this Preset.

- While **holding down** the STORE key, make a preselection by pressing the appropriate button (Universal, Selective, Preset Filter ON or OFF).
- Release STORE key (STORE LED comes on). Select the required location in the PAN/TILT window on the display by a simple touch or with left click of the mouse. These Pan & Tilt values are now stored in **this** location (STORE LED is off).
- Enter a name for the preset using the keyboard: confirm with ENTER.

If you want to store more presets for the same fixtures and functions, start again with step **3** (➠ ***3.7.5 Update Preset***).




- Press CLEAR key once:

  When pressing the CLEAR key for the **first** time, the selected fixtures in the FIXTURE sheet will be deselected (yellow characters will turn grey).

The modified (active) values will be preserved and are displayed on red background.

- Press CLEAR key again:

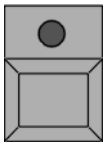
  Pressing the CLEAR key the **second** time will cancel the activation of the modified values (red background).

- Press CLEAR key a 3rd time:

  Pressing the CLEAR key a **third** time will reset all modified values (default or to the position before the modification).

To create presets for other fixtures and functions, start again with step **5** and select the respective fixtures/channels and functions.

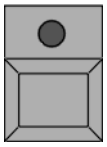
## 3.7.1 Moving Preset Keys within the Window




Press MOVE key 1x (LED comes on).

Activate the key in the respective window by either using the touchscreen or a left mouse click on the key and drag (a hand symbol appears) to the required location within this window.

You can also insert preset keys.

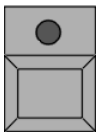



Press MOVE key 2x (LED flashes).

Activate the key in the respective preset window using the touchscreen or make a left mouse click and drag (hand symbol appears) to the desired location between two other keys. The following keys will all be moved by one position to the right.

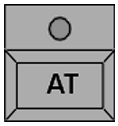
## 3.7.2 Copying Presets

COPY



Press the COPY key once (LED is on).

Select the Preset Keys in the respective PRESET Window. By selecting mulitple presets, several presets can be copied at the same time.




Press the AT key 1x (LED is on).

Click on the destination for the copied presets in the PRESET Window.

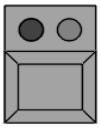
Press the ENTER key once.

## 3.7.3 Selecting Presets

Select the Fixtures or Dimmers, for which you want to call up a preset (Fixtures/Dimmers have to be displayed in yellow). Now, the individual presets can be called up for the selected Fixtures. The called-up presets and their names will be displayed in the FIXTURE windows.

If you select a preset directly, without having selected Fixtures or Dimmer channels, all Fixtures and Dimmers, for which presets had been created, will be selected. The preset can now be called up by pressing the respective key.

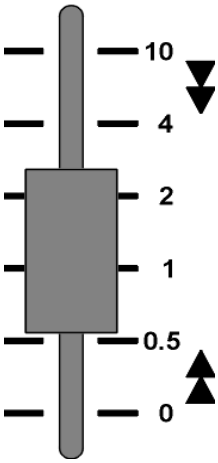
SET MANUAL FADE



Using the Fader next to the right display, you can either define Preset Fade times or fade over presets manually.

Press the key above the Fader once (red LED is on). Select the desired Fade time using the Fader. The selected Fade time will be used when presets are being called up.

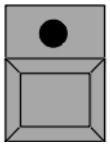
Press the key above the Fader once more (green LED is on). Select your Presets. With the Fader, you can now fade over towards the selected Preset. Default setting for the Fader to fade just upwards or in both directions ➠ **2.13** Settings in the DEFAULTS menu below the Executor Defaults Crossfade.




## 3.7.4 FREEZE Function

By activating the FREEZE function, called-up Presets can be locked. As long as the FREEZE Function is switched on, the called-up preset can not be overwritten by any Cues, Sequences or Chasers.

FREEZE



Press the FREEZE key once (LED is on).

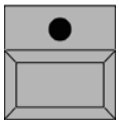
Select a Preset – the selected Preset will be activated and can no longer be modified by Cues, Sequences or Chasers.

In order to deactivate the FREEZE function, press the FREEZE key once more (LED is off).

➠ ***3.4.2*** Pause Function

## 3.7.5 Update Preset

EDIT

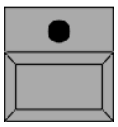


Press the EDIT key (LED is on).

Click on or touch one of the Preset Keys (the LED will blink, the preset key will display EDIT). The used fixtures/channels are being selected and the values will be activated.

Make your required modifications.

UPDATE



Press the UPDATE key.

A window appears, where you can either store the preset by pressing the OK key or cancel the modification by pressing CANCEL.

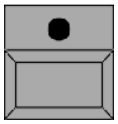
If you want to change more than one preset, you can select another preset by pressing the EDIT key right after the modification, followed by the NEXT key. Before the activation of the new selected preset, a window will open, where you can store the 1st preset by pressing the OK key or where you can cancel the modification by pressing CANCEL. The second preset can only be activated after this.

**Or:**

When executing sequences you can modify and store single values of presets directly.

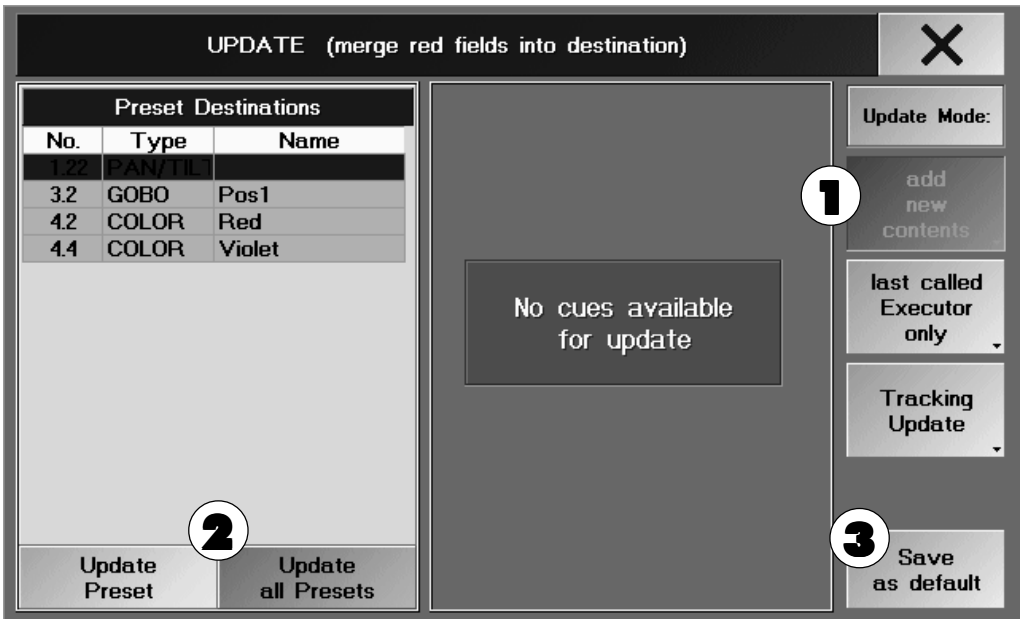
Play back a cue, in which presets are to be modified. Now you can modify this cue by direct access (the UPDATE key LED is on). ➡ **3.4** Accessing fixtures directly / **3.5** Accessing Dimmer Channels directly

UPDATE



Press the Update key once.

The UPDATE window will open.




**1** By pressing this key, you can toggle between “only original contents“ and “add new contents“.

Only original contents: Upon updating the preset, only the changes on fixtures/channels which have already been used in this preset will be stored.

Add new contents: Upon updating the preset, all changes will be stored regardless at to whether those fixtures/channels have already been used in this preset.

**2** Pressing the “Update Preset“ key will update that preset being displayed with a blue background. You can select another preset using the encoder.

Pressing the “Update All Presets“ key will update all presets listed in the chart.

**3** Pressing the Save as default key will store all (pre)- settings as default (e.g.: Only original contents oder Add new contents). These settings will be ready the next time you open the Update menu.

# 3.8 Deleting Groups, Sequences, Views etc.

**For all following Deletions, the DELETE key has to be pressed in advance (LED is on).**

**Deleting Groups:** Select the respective Group by touch or left mouse click.

**or:**

Press the GROUP key. Enter a Group number using the numeric keypad and confirm with ENTER.

**Deleting Presets:** Select Preset in the respective window by touch or left mouse click.

**or:**

Press the PRESET key. Enter a Preset Function number (e.g.: 3 for Gobo) followed by „.“ and the Preset number; confirm with ENTER.

**Deleting VIEW Assignments:** Select a VIEW with the VIEW key on the side of the numeric keypad, via the Touchscreen or a left mouse click.

**Deleting a VIEW:** Press the VIEW key (LED is on). The SELECT VIEW window appears; now select the window to be deleted. The VIEW Name will be maintained, but without any contents. All assignments to VIEW keys are now deleted.

**Deleting a MACRO:** Press the MACRO key (LED is on). The SELECT MACRO window appears; now select the macro to be deleted. The MACRO Name will be maintained, but witout any contents. All assignments to MACRO keys are now deleted.

**Deleting an EXECUTOR:** Press the desired EXECUTOR key.

**or:**

Deleting the EXECUTOR on the **current** page:
– Press the EXECUTOR button next to the numeric keypad (LED is on). Enter the EXECUTOR number via the numeric keypad and confirm with ENTER.

Deleting the EXECUTOR on **another** page:
– Press the EXECUTOR button next to the numeric keypad (LED is on). Now, enter the PAGE number.

Then, press the full stop key and the number of the EXECUTOR and confirm with ENTER.

**Example:** EXECUTOR 5 on PAGE 3 is to be deleted:
***Entry:*** [DELETE key] [EXECUTOR button] [3] [.] [5] [ENTER]

**Or:**

– Press the EXECUTOR button next to the numeric keypad (LED is on). Enter the EXECUTOR number via the numeric keypad.
– Press the PAGE key next to the numeric keypad (LED is on). Enter the PAGE number via the numeric keypad and confirm with ENTER.

**Deleting Sequences:** Press the SEQUENCE key. Enter the number of Sequence via the numeric keypad and confirm with ENTER.

**Deleting CUES:** Press the SEQUENCE key. Enter the number of Sequence via the numeric keypad. Press the CUE key and enter the cue number via numeric keypad; confirm with ENTER.

If no sequence number is entered, the Cue of the Master (default) sequence is deleted.

**Deleting a PAGE:** Press the PAGE key next to the numeric keypad. Enter the PAGE number via the numeric keypad and confirm with ENTER. The complete PAGE with all EXECUTOR faders and buttons is deleted.

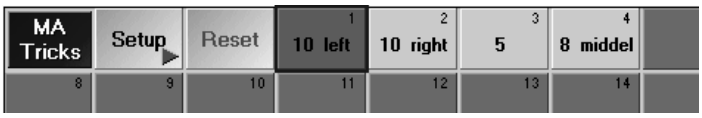
# 3.9 MAtricks

## 3.9.1 Intelligent Selecting

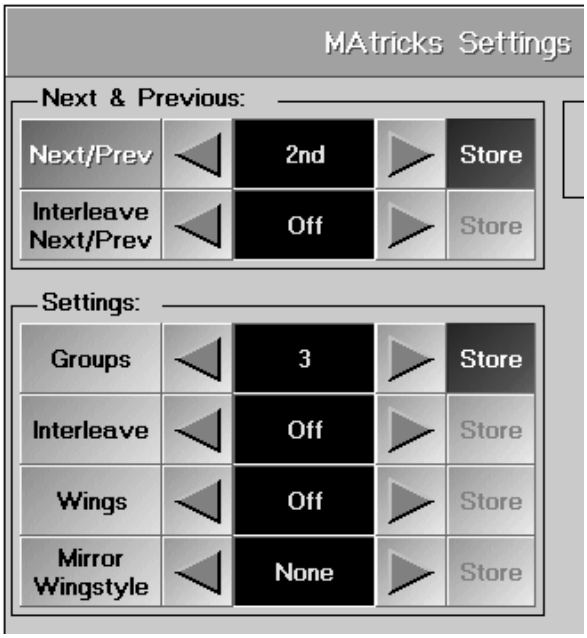
Here, you can create, store and directly call up different Selection groups.

Find out, what the different combinations and the resulting options can be used for, by simply trying them out. The listing of the individual functions will only contain and explain a few of the many options.

In the Matrix pool, press the “SETUP“ button.




The “MAtricks Settings“ menu will open.




**Next/Prev:** Move individual or several selected fixtures within the whole selection.
E.g. select fixtures. When pressing the “Next/Prev < “ or “ > “ key for the first time, the first/last fixture remains selected. When pressing the key once more, the next will be selected, and so forth. This function can also be operated by using the NEXT/PREV keys.

**Groups:** Here, you can define the number of fixtures that are to be moved simultaneously within the selection.
E.g. Press the “Groups > “ key, until a „3“ appears. Now, each time you press the “Next“ key, the next 3 fixtures of the whole selection will always be selected.

**Interleave:** To divide the whole selection into groups.
e.g.: If you select a 3 under „Interleave“, the next 6 fixtures (3 groups of 3 fixtures each) will be skipped, when pressing the “Next“ key.
To select the skipped fixtures, you can choose individual groups. If you had entered a value under “Interleave“, 1st will be displayed for the first group on the right of “Interleave Next/Prev“. Using the “ < “ or “ > “ keys, you can switch over to the next group. When moving the selection, the other fixtures will now be selected.

**or:**

**Interleave Next/Prev:** E.g.: You want to select each fifth fixture of the whole selection and move this subselection. Next/Prev must be „Off“. Switch it off by shortly pressing into the center of “Next/Prev“ to “ < 2nd > “. The display will switch to “Off“.
Then, press “ > “ under “Settings“ next to “Interleave“, until a 5 appears. Now, you have selected only the first, sixth, eleventh, .... fixture.
By shortly pressing “ < or > “ next to „Interleave Next/Prev“, you can move the selection by one position up or down. If you want to move several fixtures simultaneously, you can define this under “Groups“.

**Additionally:**

**Wings:** Allows you to split and mirror the whole selection.
E.g.: When you have a setting of 2, the complete selection of fixtures will be split in the middle. The set selection will now be executed in the first half from the first fixture to the middle, and in the second half from the last fixture backwards to the middle.

## 3.9.2 Mirroring when Entering Pan/Tilt values

**Mirror Wingstyle:** When entereing values for PAN/TILT, these can be mirrored individually or together.

E.g.: Take 10 Scanners (mounted in a row from left to right) and select them 1-10.
Now, set “Wings“ on 2 digits and “Mirror Wingstyle“ on Pan.
Now, when you modify the „Pan“ value, the first 5 Scanners move in one direction and the others into the other one.

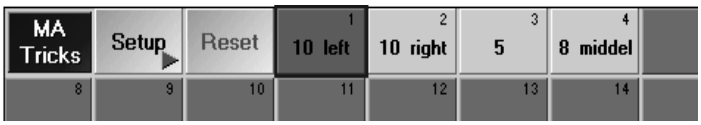
### 3.9.3 Storing settings

The modified settings can be stored individually or together.

In the MAtricks Setup, you'll find a "Store" button next to each function. If a function has been changed, this buttons will automatically be activated (dark green background). By shortly pressing the button, you can switch on (activated) or off (deactivated) the storing function. When storing, only the activated functions will be stored.

To store, press the STORE key (LED in on).

Now, choose the desired button in the MAtricks pool. Directly after storing, you can assign a name for the stored setting.




By cklicking on the button, you can call up the stored setting, and the button will be displayed with a dark green background. You can combine multiple stored settings by calling them up in sequence.

By pressing the "Reset" button, all settings in the MAtricks Setup will be switched off.

### 3.9.4 Selective Copying

With the Circular Copy function, you can copy or move set values of fixtures to other fixtures.

#### Copying values

Example:
- Select a fixture and set the Dimmer value to 100%.
- Select the fixture and further fixtures.
- By pressing the " > " button, the Dimmer of the fixture that was selected as next one, will be set to 100%. With each pressing, the value will be copied to the next, selected fixture. When pressing "<", the value will be copied to the last selected fixture.

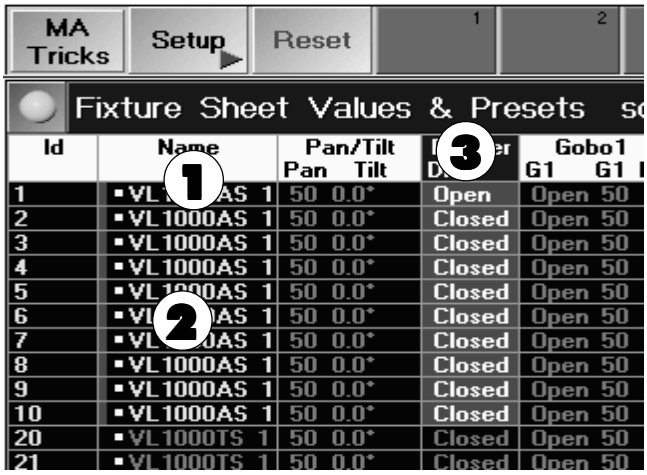
#### Moving values

Example:

**1** Select a fixture and set the Dimmer value to 100%.

**2** Select the fixture and further fixtures, to which you want the Dimmer value to be moved to.

**3** By pressing 2x on the column title (here Dimmer), you can activate all Dimmer values für the selected fixtures.
By pressing the " > " button, the Dimmer value of the first fixture will be moved to the next, selected fixture. When pressing "<", the value will be copied to the last selected fixture.




#### Setting Filters, to just copy/move individual Functions

Example: You have set different positions for 10 Scanners. Now, you want to just copy/move the "PAN" value from one fixture to the others.
Pressing the "Filter" button will open "AT Filter Option" menu. In this menu, you'll find all functions available. The functions are all displayed with a green background. Pressing on a function will deactivate it (will be displayed in black then).
If you just want to copy/move the "PAN" value, deactivate "TILT" and leave the menu by pressing the "X" key. Now, only the "PAN" value will be changed, when you copy/move.

# 4 Cues and Sequences

A Cue is an individual stage setting, which can be assigned and stored directly to EXECUTOR button or EXECUTOR Fader.

Several cues in line are called a sequence. Sequences of cues can also be assigned and stored on an EXECUTOR button or EXECUTOR Fader.

If cues are created using Presets, a modication of this Preset will automatically update all cues which use this Preset.

Thus, time-consuming checking and correction of individual Cues becomes unnecessary.

**TIP** We recommend to use the Preset functions as often as possible.

EXECUTOR buttons or Faders can have multiple assignments for created sequences.

EXECUTOR Faders and buttons are organised in PAGES. You can work on all PAGES simultaneously. Changing pages only effects what you currently have physical access to NOT what is currently playing back. When using motor faders, those motor faders will move reflect the status of the current PAGE.

With the EXECUTOR buttons it is possible to call up the Cues, Sequences and Chasers. ➠ ***5.1.3*** Buttons and Faders.

**For dimmer channels, the respective MASTER FADER and the Grandmaster have to be pushed up.**

EXECUTOR buttons do not have a Master and are therefore are activated immediately. When dimmer values are playback via Cues or Sequences **assigned to EXECUTOR buttons** priority issues may arrise then trying to control these same dimmer values from other EXECUTOR button and faders without first switching off the relevent EXECUTOR buttons. In practical terms this means that to work with Dimmers as on a convenetional console (HTP), dimmer channels have to be assigned to the Executor Faders.

## 4.1 Creating Cues (separate memories)

The actual stage setting can be stored as a Cue and be called up via the EXECUTOR buttons or faders.

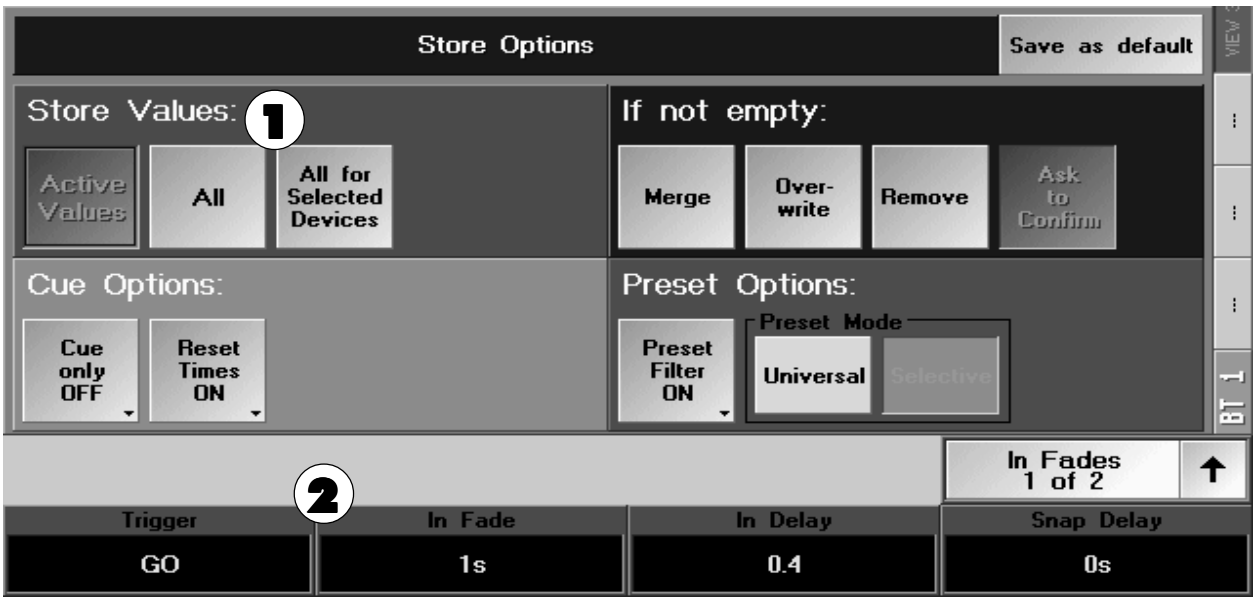
- All **changed** (active) values (recommended setting),
- **all** momentary settings (complete Output),
- or **all** values of the **selected** Fixtures and channels can be stored as Cues.

### 4.1.1 Creating new Cues

Create the look on stage by direct access or presets. ➠ **3.4** and **3.5** Accessing Dimmer Channels directly or **3.7** Calling up Presets

This look shall now be stored as CUE in the following way***:***

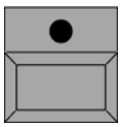
Press the STORE key and **hold** it. The following options and encoder names will appear on the right TFT display:




**1** Press one of the following keys (selected key will receive dark-grey background colour):

- Active Values: Store **only** the **active** values (all values in the FIXTURE/CHANNEL window which are shown with a **red background colour**).
- All: Store **all** settings (all fixture and channel values).
- All for Selected Devices: **All** values of the **selected** fixtures and channels will be stored (the fixture/channel numbers will be marked in yellow).

STORE



Release the STORE key (LED stays on).

**2** For **this** CUE, set the following parameters via the encoders:

- Trigger: Call of the CUE by GO, SOUND or FOLLOW (i.e. after previous cue in the sequence has completed) or automatically after an amount of time.
- Fade: CUE will be played back with the set time; this is only possible with "FADE" functions. ➡ **2.3** Single Channel-specific Adjustments for the Current Show (point 10) and ➡ **2.5** EDITING FIXTURES (modify) (point 9)
- Delay: CUE will be called up delayed by the time set; only possible for the „FADE" functions.
- Snap-Delay: The Snap values of the CUE will be played back after the set period of time (only with "SNAP" functions).

Pressing the In Fades button will switch it over to Out Fades:

- Out Fade: Dimmer channels, which **reduce their level** in the next Cue, will be faded with the set period of time.
- Out Delay: Not yet available in this software version (4.00).

Cues can be stored on EXECUTOR faders or EXECUTOR button.

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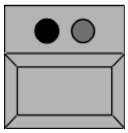
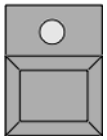


Define the assignment position of the Cue by pressing the EXECUTOR button once. When storing to an EXECUTOR FADER, press a button above or below the fader once.

The CUE is now assigned to this EXECUTOR button or EXECUTOR fader and stored in the Sequence Pool. This way it is possible, to assign the same Cue more often than once. ➡ **5.1** ASSIGN menu (Assignment to EXECUTOR)

Repeat all steps to create the next Cue.

CLEAR

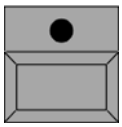


Pressing the CLEAR key: once - will delete the selection, twice – will delete the active values and reset all values then.

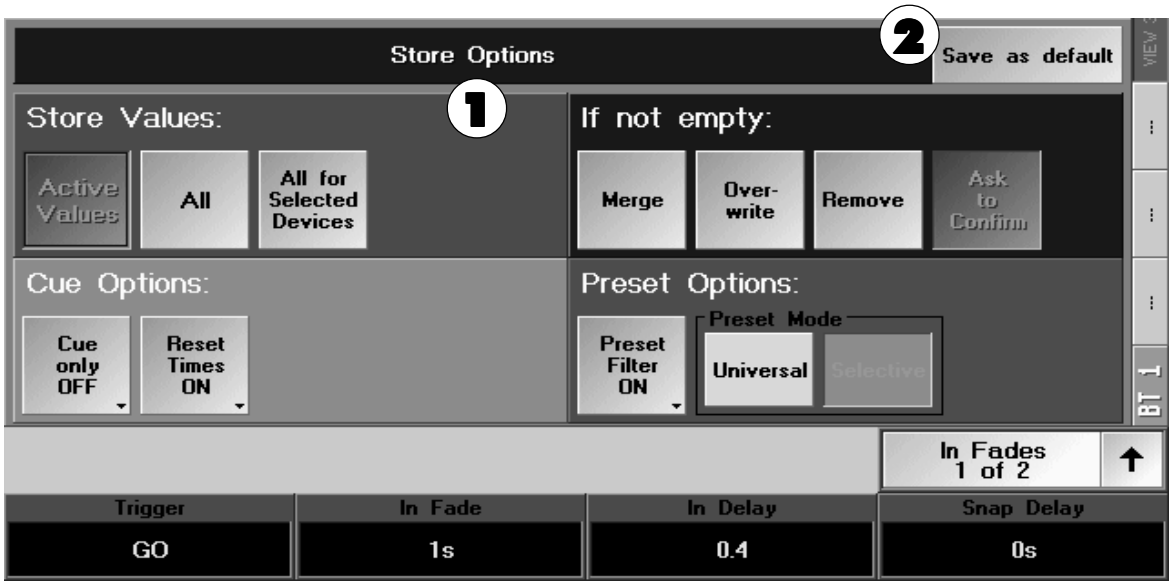
## 4.1.2 Store Options - Functions available when storing

The different settings in this menu have an effect on how Cues, but also Presets are stored. The settings modified in this menu can be stored as defaults. These (Pre) sets will then be used for storing, but can also be adjusted from case to case.

STORE



Press the STORE button and **hold** it. In the right TFT Display, the following selection will appear:




1 Press the buttons (selected button will be backlit in dark grey):

**Store Values:**

- Active Values: Will store **only the active values** (all values that have a **red background** in the FIXTURE or CHANNEL window).
- All: Will store **all current settings** (all values of all Scanner and Dimmer channels).
- All for Selected Devices: Will store **all values of the selected Scanners and Dimmers** (the Scanners or Dimmers are indicated by yellow names).

**If not empty:**

- Merge: When expanding Cues, all settings already stored will be kept. The newly set values will be stored to the Cue as additions, already existing ones will be overwritten.
- Overwrite: Cue will be overwritten completely.
- Remove: When removing, only those parts of the Cue will be cut (deleted) out of the existing Cue that are active (red).
- Ask to Confirm: When storing a second Cue on an Executor, the SAVE window will open:

  Here, you can execute one of the functions by selecting it.

**Cue Options:**

- Cue Only On/Off: Defines, whether Cue Only is On or Off when storing.

- Reset Times On/Off: Preset defining whether the set times are to be reset when storing CUEs (FADE/DELAY) the next time (RESET TIMES ON) or whether they are to be kept (RESET TIMES OFF).

**Preset Options:** ➠ **3.7 Creating and calling up Presets**

2 Pressing the Save as default button will save the presets as defaults.

### 4.1.3 Overwriting a Cue

If you wish to overwrite a Cue completely, simply use the same EXECUTOR fader or EXECUTOR button once again. The following window will appear:

In order to overwrite this cue completely, press the OVERWRITE key (If the executor contains more than one cue you will have to be specific about which cue you want to Store - 4.2 Programming Sequences).

### 4.1.4 Merging a Cue

When merging cues, all existing and stored settings will be maintained. The newly set values will be stored and added to the cue, while already existing values will be overwritten.

If you wish to merge a cue, simply use the same EXECUTOR Fader or EXECUTOR button once again. The SAVE (STORE) window will appear (as above). In order to merge this cue, press the MERGE key (If the executor contains more than one cue you will have to be specific about which cue you want to store - 4.2 Programming Sequences).

### 4.1.5 Removing a Cue

In the removing operation, the active values (red) will be subtracted from the already existing cue.

If you wish to remove from a cue, simply use the same EXECUTOR Fader or EXECUTOR button once again. The STORE window will appear (as above). In order to remove from this cue, press the REMOVE key (If the executor contains more than one cue you will have to be specific about which cue you want to Store - 4.2 Programming Sequences).

---

You can also remove specific parts of a complete sequence by entering: [STORE] [SEQUENCE] [Sequence number] [CUE] [1] [THRU] [number of last Cue] [ENTER]. A window will open in which you confirm your operation by pressing the REMOVE key. (This syntax also applies for “OVERWRITE” and “MERGE”.)

**Caution!** In NON-TRACKING mode, only Dimmer channels of the first copied Cue are taken account of. For the following Cues, the Dimmer values are “0” and will have to be reprogrammed manually.

---

## 4.2 Programming Sequences

Sequence is the generic term for multiple of cues, with the option of various Fade and Delay times per channel and cue. Sequences can be stored either on an EXECUTOR fader or an EXECUTOR button.

Store the first Cue (first step of a sequence) either on an EXECUTOR fader or an EXECUTOR button. ➠ **4.1** Creating Cues

Create the second Cue (next step of the sequence) as before. When storing the second Cue, use the same EXECUTOR fader or EXECUTOR button. Now, the STORE window will appear:

In order to create a Sequence (more than one Cue), press the CREATE SECOND CUE key. The Cue will now be stored in this Sequence as the second step (Cue 2).

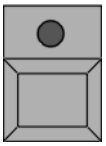
In the ASSIGN menu, you can define whether this Sequence should be executed in TRACKING or NON-TRACKING mode. TRACKING and NON TRACKING. ➠ **5.1.4** EXECUTOR SETTINGS

Create the next Cue for any other step and use the same EXECUTOR fader or button when storing.

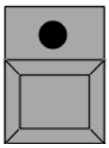
## 4.2.1 Copying Sequences

Once a Sequence has been created, it can be copied completely with all component Cues, Fade and Delay times.

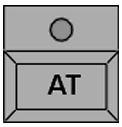
**COPY** Press the COPY key once (LED is on).



**SEQUENCE** Press the SEQUENCE key once (LED is on).



Using the numeric keypad, enter the number of the Sequence to be copied. All sequences and their numbers will be displayed in the Assign menu. ➠ **5.1** ASSIGN Menu

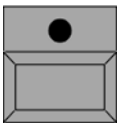



Press the AT key once (LED is on).

Using the numeric keypad, enter the number of the new Sequence and confirm with ENTER.

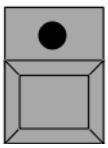
## 4.2.2 Including Cues

**STORE** Set a Cue ➠ **4.1** Creating Cues



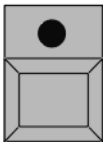
Press the STORE key once (LED is on).

**SEQUENCE** Press the SEQUENCE key once (LED is on).



Enter the number of the Sequence using the numeric keypad.

**CUE** Press the CUE key once (LED is on).



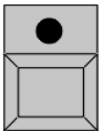
Enter the number of the **new** Cue via numeric keypad and confirm with ENTER.

Example: A new Cue is to be included between Cue 3 and Cue 4. This new Cue will be named for example Cue no. 3.1(numbers between 3.001 and 3.999 are possible).This way, 999 Cues can be included between two Cues.

## 4.2.3 Default Sequence (Master Sequence)

When creating sequences, Cues can directly be stored on a Default Sequence.

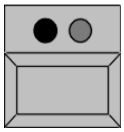
**SELECT**



Press the SELECT key once (LED is on).

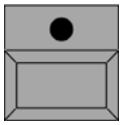
Select the respective EXECUTOR, which shall be the Default Sequence by pressing the respective EXECUTOR button once. The headline of the small EXECUTOR window will be green.

**31**



To create the first Cue of the Default Sequence. ➠ **4.1** Creating Cues

**STORE**



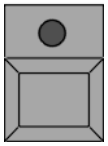
Push STORE key 1x (LED flashes).

Push ENTER key 1x; the created cue is now stored in the Master Sequence.

**TIP** If no EXECUTOR button has been selected before storing, and you confirm with ENTER, the stored Cue will always be added to the current Default Sequence.

### In the Default Sequence, Cues can be played back directly

**GOTO**



Press the GOTO key once (LED is on).

Enter the Cue number on the numeric keypad and confirm with ENTER. The Cue will be played back with the set duration (➠ **2.13** Settings in the DEFAULTS menu).

When played back Cues directly, you can enter a FADE or DELAY time using the TIME key.

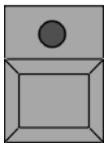
After having entered the Cue number, press the TIME key for the FADE time once and enter the period of time using the numeric keypad, or press the TIME key once more for the DELAY time, enter the duration using the numeric keypad and confirm with enter. The Cue will be played back with the entered times.

**The Cue will always be played back as if the Sequence was run from the very beginning. That means, all previous steps will be accounted for with regards to the tracking of values(this depends on whether Tracking had been activated in the ASSIGN menu. ➠ 5.1.4 Executor Settings)**

## 4.2.4 LOAD CUE

You can use LOAD CUE in order to directly call up a certain cue with either one or several executors.

**GOTO**



Press the GOTO key twice (LED is blinks).

Select an executor by shortly pressing a key.

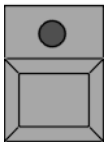
A window with a chart appears. All cues of this sequence are listed in this chart.

If you select one of these cues, it will be loaded. This cue will be displayed as next (red blinking background) in the small executor window above the executor.

Start this cue with the GO button.

### Cues within the Mastersequence can be directly loaded

**GOTO**



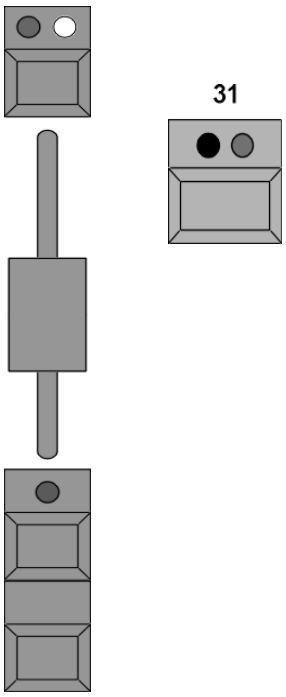
Press GOTO key twice (LED is on).

Enter Cue number using the keypad and confirm with ENTER.

The Cue will be loaded and displayed as next (red blinking background) in the small executor window above the executor.

Start this cue with the GO button.

## 4.2.5 Playing back sequences or chasers




Using the EXECUTOR button, you can playback the stored Sequences directly.

If the green LED on the button is lit, a Cue or a Sequence of cues is stored on this button.

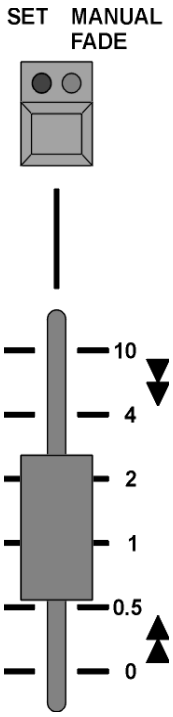
If the yellow LED is lit or is flashing, this Cue, Sequence of cues or Chaser (a sequence which as been told to run automatically) is activated.

The yellow LED indicates the beat of a Chaser.

Push up the respective Master Fader for the EXECUTOR faders to see the dimmer values. Playback Cues using the Go+ button (standard setting is button below the Fader). If the green LED in the button above the Fader is on, a Cue or a Sequence is stored on this button.

If the yellow LED is on or is flashing, this Cue, the Sequence or the stored Chaser is activated. The yellow LED indicates the beat of a Chaser.

Using the PAGE keys, you can select other pages. ➠ **5.5** PAGE Administration (PAGE)




With the Fader to the right of the EXECUTOR buttons, you can either set fixed fade times or perform manual fade-in when playing back Cues using the EXECUTOR buttons.

Press the key above the Fader once (red LED is on). Set the desired fade time using the Fader. When selecting the Sequence using the EXECUTOR buttons, only the fade time set here will be used (this also applies to SNAPDELAY times).

Press the key above the Fader again (green LED is on). Select the sequence using the EXECUTOR button. Using the Fader, you can now fade in the selected sequence. Default setting for the Fader can be changed to fade just upwards or in both directions ➠ **2.13** Settings in the DEFAULTS menu below the Executor Defaults Crossfade.

With the PREVIEW function, Cues can be displayed in the FIXTURE SHEET or CHANNEL SHEET without being output to stage.

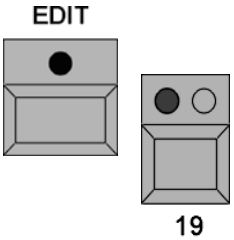
Press the PREVIEW key once and playback the desired Cue using the EXECUTOR button.

# 4.3 Editing Sequences

During editing procedures, you can change **all** values of cues, add values or delete them. The X-FADE and DELAY times can be altered and the trigger of cues via GO key, X-FADER, SOUND or TIME can be defined.

Apart from what is indicated in this chapter, there are three other ways of editing:

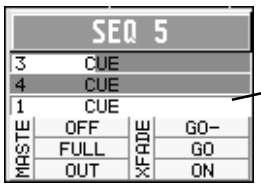
➠ **4.1.3, 4.1.4, 4.1.5** Overwriting, expanding, removing Cues
➠ **4.3.4** Update Cues or Presets
➠ **5.3** EXECUTOR window




Press the EDIT key (LED is on).

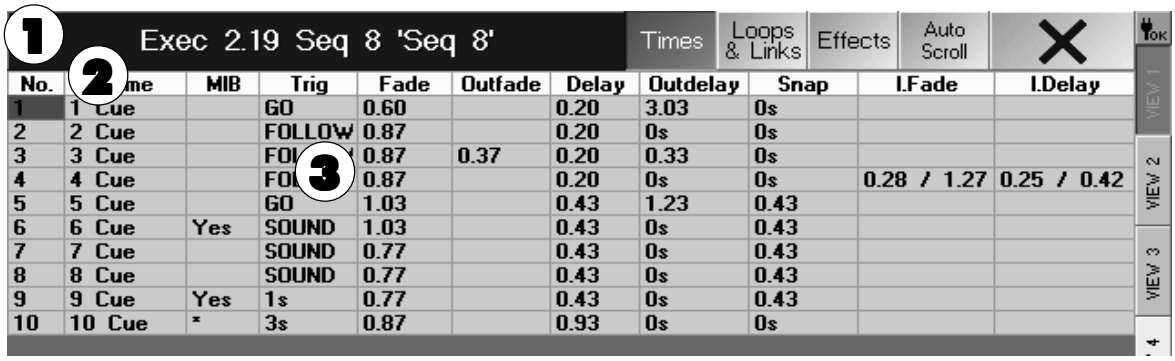
Select the sequence with the respective EXECUTOR button.

**Or:**




Left click with the mouse into the small window above the EXECUTOR Fader or use the touchscreen.

The EDIT menu appears on the right TFT display, showing a listing of the individual cues contained in the selected sequence.




| No. | Name | MIB | Trig | Fade | Outfade | Delay | Outdelay | Snap | I.Fade | I.Delay |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 Cue | | GO | 0.60 | | 0.20 | 3.03 | 0s | | |
| 2 | 2 Cue | | FOLLOW | 0.87 | | 0.20 | 0s | 0s | | |
| 3 | 3 Cue | | FOLLOW | 0.87 | 0.37 | 0.20 | 0.33 | 0s | | |
| 4 | 4 Cue | | FOLLOW | 0.87 | | 0.20 | 0s | 0s | 0.28 / 1.27 | 0.25 / 0.42 |
| 5 | 5 Cue | | GO | 1.03 | | 0.43 | 1.23 | 0.43 | | |
| 6 | 6 Cue | Yes | SOUND | 1.03 | | 0.43 | 0s | 0.43 | | |
| 7 | 7 Cue | | SOUND | 0.77 | | 0.43 | 0s | 0.43 | | |
| 8 | 8 Cue | | SOUND | 0.77 | | 0.43 | 0s | 0.43 | | |
| 9 | 9 Cue | Yes | 1s | 0.77 | | 0.43 | 0s | 0.43 | | |
| 10 | 10 Cue | * | 3s | 0.87 | | 0.93 | 0s | 0s | | |

**1** You will find the addressed EXECUTOR fader or button in the headline, giving the number of the PAGE and the sequence name.

**2** The second line will give you the functions of the columns.

- No.: Number of Cue
- NAME: Name of Cue
- MIB: Activate MIB (Move In Black function) individually for each cue. Activate it by selecting a cell and shortly pressing on the encoder on the right side of the display. Activation is confirmed by YES.

MIB can only be used in cells where a " * " is displayed.

- Trig: The trigger for the Cue (GO button, SOUND, TIME or FOLLOW)

If the TIMES key on the title bar of the edit window is pressed:

- Fade: FADE time
- Outfade: Duration of the fade time on Dimmer channels which are reducing in value
- Delay: CUE will be called up delayed by the time set; only possible for the „FADE" functions
- Outdelay: Not yet available in this software version (4.00)
- Snap: Duration of the DELAY
- I.Fade: Duration of the individual FADE time (min and max)
- I.Delay: Duration of the individual DELAY time (min and max)

If the LOOPS key on the title bar of the edit key is pressed:

- LOOP: Will initiate a jump after the cue that includes the loop statement has finished
- LOOPDELAY: The length of time or the number of occurences of a LOOP will be displayed
- LINK: The Command Line Order to be triggered will be displayed
- LI. DEL: The delay value for the execution of the Command Line Order will be displayed

If the EFFECTS key on the title bar is pressed:

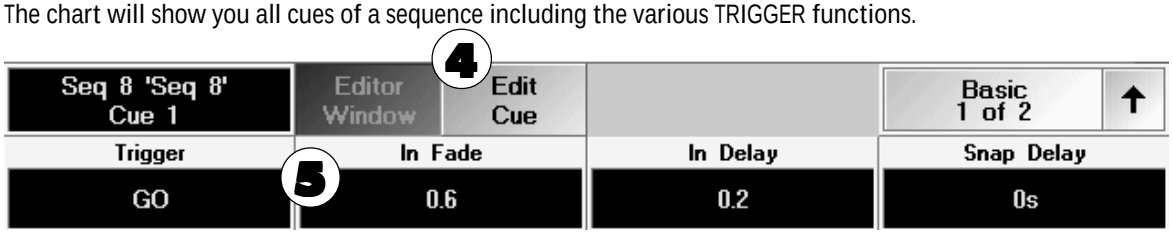
- EFFECTS: Display of the effects calls

A second sheet will appear in the lower part of the display:

- NO.: Number of the Effect
- NAME: Name of the Effect
- ACTION: Type of Effect call (play forwards, play backwards, pause, stop)
- INTENS: Display of the defined size of the Effect
  F (Fade): If Y (YES) is displayed, the size will be faded in with the set fade time
- SPEED: Display of the defined speed of the Effect
  F (Fade): If Y (YES) is displayed, the speed will be faded in with the set fade time
- SOFT: Display of the set softness (softer fade in) of the effect
  F (Fade): If Y (YES) is displayed, the softness will be faded in with the set fade time

If AUTO SCROLL key is pressed, the chart will automatically move to top/bottom when handling larger sequences.

**3** The chart will show you all cues of a sequence including the various TRIGGER functions.




**4** The EDIT CUE key will enable you to change values of individual cues (➠ below).

**5** Description of each encoder.

## 4.3.1 Changing values for individual cues in the sequence

– Select the Cue that you want to change (red cell) in the Name column.

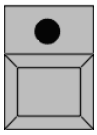
– Press the Edit Cue key (LED in the EDIT key starts flashing).

– ***All values of the Cue will now be played back on stage and displayed (active, red) in the Channel & Fixture sheets.***

– The cue can now be changed by either direct access or presets. ➠ **3.4** Accessing Fixtures directly (in the FIXTURE SHEET) / **3.5** Accessing Dimmer Channels directly (in the CHANNEL SHEET) and **3.7** Creating and calling up Presets

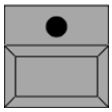
If this Cue has been changed, the LED in the Update button will be on.•

BLIND



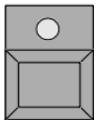
If the Cue is not to be seen on stage, activate the Blind function by pressing the BLIND key (integrated LED is on).

STORE



Press the Update key once. Choose OK in the window that has just opened. The changed Cue is now stored.

CLEAR

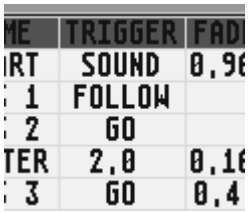


Press the CLEAR key twice if necessary (Cue values will be deleted in the FIXTURE or CHANNEL window).

For modifying further Cues, select the respective Cue one by one (will be displayed on a green background).

Repeat all steps as described with first cue.

## 4.3.2 Changing the TRIGGER (Call-up) of individual Cues within a Sequence

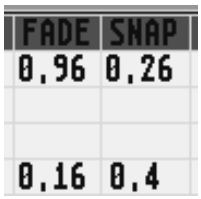



Select the respective cue within the Trig column (red cell).

Enter the following with the left Encoder or via the keyboard and confirm with ENTER.

- F: for FOLLOW mode
- G: for GO button
- S: for SOUND signal
- No.: Automatically according to set time (e.g. if the set time is 1.5, this Cue will be called up after 1.5 seconds automatically).

## 4.3.3 Changing the FADE or DELAY times of individual steps within the Sequence




Select the respective cue (red cell).

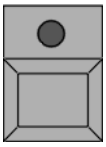
Here, the duration for **this** cue can be changed with the In-Fade, In Delay or Snap encoder.

Pressing the **Basics** button (above the right Encoder) will switch this button to **Out**: Now, you can modify this time with the Encoder Out-Fade.
Outdelay is not yet available in this software version (4.00).

If no FADE or DELAY times are indicated, none are stored in this CUE.

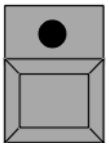
## 4.3.4 Copying Cues

COPY



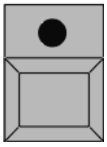
Press the COPY Key once (LED is on).

SEQUENCE

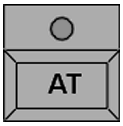


Press the SEQUENCE Key once (LED is on).
Using the keypad, enter the number of the Sequence from which the Cues are to be copied.

CUE



Press the CUE Key once (LED is on).
Using the keypad, enter the number of the first Cue to be copied. If only one Cue is to be copied, continue with the AT Key.
Pressing the +Key will copy the selected cue and the cue indicated by the subsiquent number.
Pressing the THRU Key on the keypad will copy the Cues **from...to** (including the last Cue).
When pressing the –Key, the Cue with the next number will **excluded from the** copying operation.



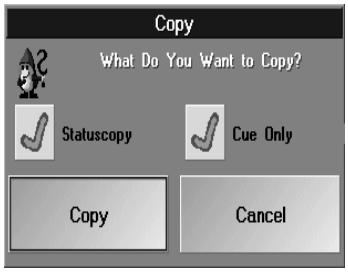

Press the AT key once (LED is on).

Enter the new (destination) number for the copied Cues using the keypad.

Example: The Cues are to be inserted between Cue 10 and Cue 11. Number these Cues e.g. as 10.1 (possible Cue numbers are 10.001 - 10.999). This way, up to 999 Cues can be inserted between two existing Cues.

Confirm with ENTER.

When copying **one** Cue, the COPY window will open.




After pressing the key on the left of Statuscopy, you can choose between:

**Only the values and times actually stored in this Cue** will be copied. The tracked information will be disregarded.

The Cue will be copied as it would actually be realized on stage. That means, all previous steps will be taken into account and the result will be copied.

By pressing the button on the left of **Cue Only**, you can choose between:

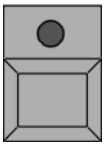
Normal Copying (with or without Status)

Will copy the values of the step before into the step after, but only to a position having no value; this wouldn't be wise. The copied Cue will now be a „Cue Only"

Pressing COPY will copy the Cue, CANCEL will abort the process..

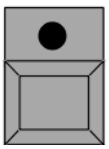
## 4.3.5 Moving Cues

MOVE



Press the MOVE Key once (LED is on).

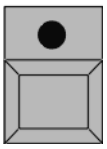
SEQUENCE



Press the SEQUENCE Key once (LED is on).

Using the keypad, enter the number of the Sequence in which Cues are to be moved.

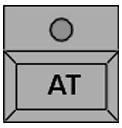
CUE



Press the CUE key once (LED is on).

Using the keypad, enter the number of the first Cue to be moved. If only one Cue is to be moved, continue with the AT key.

Pressing the +Key will move the selected cue and the cue indicated by the subsiquent number Pressing the THRU kKey on the keypad will move the Cues from...to **(including last Cue).** When pressing the –Key, the Cue with the next number will **be excluded from the move operation.**



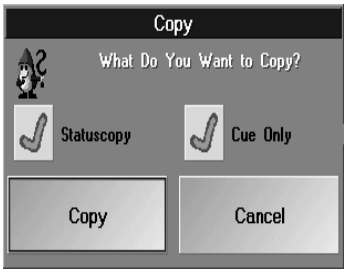

Press the AT key once (LED is on).

Enter the new number for the moved Cues using the keypad.

Example: The Cues are to be inserted between Cue 10 and Cue 11. Number these Cues e.g. as 10.1 (possible Cue numbers are 10.001 - 10.999).

This way, up to 999 Cues can be inserted between two existing Cues.

Confirm with ENTER.




When moving **one** Cue, the COPY window will open.

After pressing the key on the left of ***Statuscopy***, you can choose between:

During the moving process, only the values and times actually stored in this Cue **will be moved**. Tracked information will be ignored.

The Cue will be moved as it would actually be realized on stage. That means, all previous steps will be taken into account and the result will be moved.

By pressing the button on the left of **Cue Only**, you can choose between:

Normal moving (with or without Status)

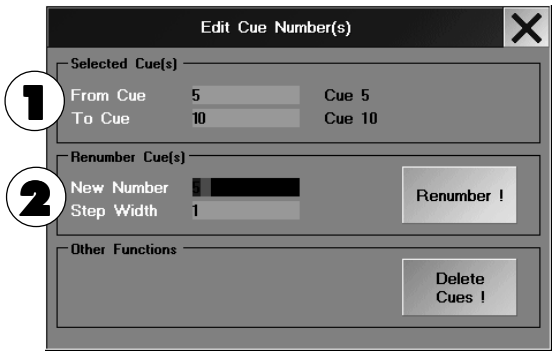
Will copy the values of the step before into the step after, but only to a position having no value; this wouldn't be wise. The moved Cue will now be a „Cue Only"

Pressing COPY will move the Cue, CANCEL will abort the process.

## 4.3.6 Deleting and renumbering Cues

Right click with the mouse on the respective Cue in the NO. column.

The following window will open.




**1** From Cue: Display of the first selected Cue. The number can be modified by clicking on it.

To Cue: Display of the last selected Cue. The number can be modified by clicking on it.

**2** New Number: Display of the first new number of the selected Cues. The number can be modified by clicking on it.

Step Width: Display of the steps, in which the Cues' new numbers will be placed. The number can be modified by clicking on it.

### Deleting Cues

Select the Cue to be deleted. By pressing the Delete Cue ! key, the Cue will be deleted. If you want to delete not only one but several Cues, select the respective Cues. By pressing the Delete Cue ! key, the Cues will be deleted.

### Renumbering Cues

Select the Cue to be renumbered. Enter the new number on the right side of "New Number". By pressing the RENUMBER key, the Cue will be renumbered. If you want to renumber not only one but several Cues, select the respective Cues. Enter the new number for the first Cue on the right side of "New Number." By pressing the RENUMBER key, the Cues will be renumbered.

## 4.3.7 Inserting LOOPs

Program flow inside a cuelist can be controlled by LOOPS.
Loops have a destination. If a Cue is executed that contains a loop, program flow will continue with the given destination instead of the next cue.
Loops can be timed. A timed loop will stay inside the loop until a given time elapses.
Otherwise loops are counting. A counting loop will stay inside the loop until the loop counter reaches zero.
Loops can be endless. An endless loop will stay forever inside the loop once it was activated.
Make a right mouse click on the respective Cue in the LOOP column. The SELECT LOOP-TARGET window will open.
Select the Cue to which the jump is to be performed. The Cue will be listed in the top line.

Select the jump function by pressing the respective Key:
- With the LOOP (TIMED) Key, a timed loop will be created.
- With the LOOP (COUNT) Key, a counting loop will be created.
- With the DELETE Key, you can delete the loop.

For the indicated loop, you can now edit the duration or the loop counter value in the LOOPDELAY column by clicking on or entering the respective value.

Example: When you enter „5" in the TIMED cell, the loop will be executed for 5 seconds. When you enter „5" in the COUNT cell, the loop will be repeated five times, before the Sequence will be continued normally.

## 4.3.8 Inserting Command Line Commands

Within a Sequence, a Command Line Command can be triggered by a Cue. As soon as this Cue is reached, this command will be executed. By setting a time frame, the command can be played back with its own individual delay time. ➠ **9.** Command Line

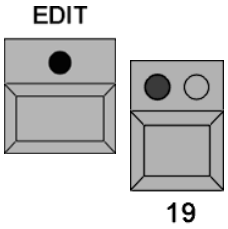
A click on the respective Cue in the LINK column. For the selected command, you can now enter a delay time in the LI. DEL column. The command will only be executed after this time has ended, e.g. if you enter „5" in the LI. DEL column, the command will be executed after a delay of five seconds.

## 4.4. Editing Chasers

A Chaser is a sequence which runs automatically. During the editing process, you will be able to modify, add or delete **all** the values of the individual Cues. Speed, X-FADE and SNAP-DELAY times can also be adapted globally.

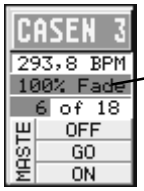
Apart from what is indicated in this chapter, there are three other ways of editing:

➠ **4.1.3, 4.1.4, 4.1.5** Overwriting, expanding, removing Cues
➠ **4.5** and ***3.7.5*** Update Cues or Presets
➠ **5.3** EXECUTOR window




Press the EDIT key (LED is on).

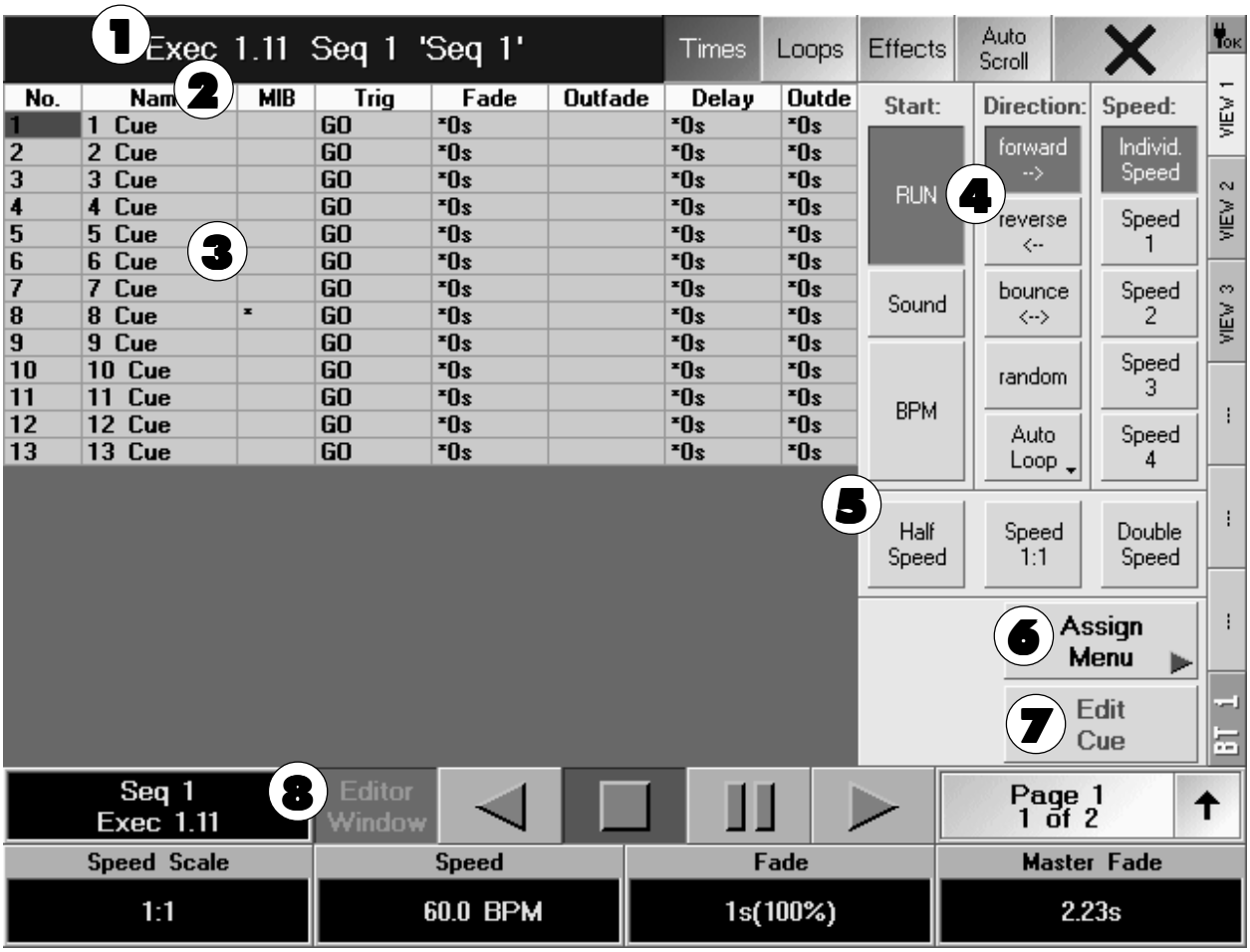
Select a Chaser with the respective EXECUTOR key.




**Or:**

Left click with the mouse into the small window above the EXECUTOR Fader.

The EDIT menu appears on the right TFT display, giving a listing of the individual cues.




**1** The selected EXECUTOR fader or button is now listed in the headline, giving the page number and the name of the sequence.

**2** The functions of the columns are given in the second line.

- No.: The number of the individual Cues
- NAME: Name of the Cue
- MIB: Activate MIB (Move In Black function) individually for each cue. Activate it by selecting a cell and shortly pressing on the encoder on the right side of the display. Activation is confirmed by YES.

MIB can only be used in cells where a " * " is displayed.

- TRIGGER: Has no effect on a Chaser

If the TIMES key on the title bar is pressed:

- FADE: Has no effect on Chaser
- OUTFADE: Has no effect on Chaser
- SNAP: Has no effect on Chaser
- I.FADE: Has no effect on Chaser
- I DELAY: Has no effect on Chaser

If the LOOPS key on the title bar is pressed:

- LOOP: Will initiate a jump after the cue that includes the loop statement has finished.
- LOOPDELAY: The length of time or the number of occurences of a LOOP will be displayed
- LINK: The Command Line Command to be triggered will be displayed
- LI. DEL: The delay value for the execution of the command will be displayed

If the EFFECTS key on the title bar is pressed:

- EFFECTS: Display of the Effect calls

A second sheet will appear in the lower part of the display:

- No.: Number of the Effect Group
- NAME: Name of the Effect Group
- ACTION: Type of Effect call
- INTENS: Display of the defined size of the Effect Group
  F (Fade): If Y (YES) is displayed, the size will be faded in with the set fade time
- SPEED: Display of the defined speed of the Effect Group
  F (Fade): If Y (YES) is displayed, the speed will be faded in with the set fade time
- SOFT: Display of the set softness (softer fade in) of the effects
  F (Fade): If Y (YES) is displayed, the softness will be faded in with the set fade time

**3** The chart shows all Cues in the Chaser (Sequence).

**4** With the help of these keys you can define the various functions for the Chaser.

- RUN: Chaser runs with the set speed. Fade and Delay times will be adjusted in terms of percentage.
- SOUND: Triggering of the steps (cues) via a sound signal. Fade and Delay times will be executed with the set time.
- BPM: Playback of the steps (cues) via automatic recognition of **B**eats **P**er **M**inute. Fade and Delay times will be adjusted in terms of percentage.
- FORWARD: Chaser runs forward.
- REVERS: Chaser runs backwards.
- BOUNCE: Chaser runs forward, then backwards and so on.
- RANDOMLY: Chaser plays back individual steps (cues) on random basis.
- AUTO LOOP / SINGLE ON / SINGLE OFF (Toggle by pressing the key):
  On AUTO LOOP, after the last step, the Chaser will jump back to the first and continue. With SINGLE ON, the Chaser makes one run and stops at the last Cue. With SINGLE OFF, the Chaser makes one run and switches off after the last Cue.
- SPEED INDV.: On RUN, an individually set speed will be used.
- SPEED 1–4 : On RUN, the respective SPEED-Group will be used. These set speeds can be used for all Chasers.
  ➠ **5.1.6** Assigning Special Masters

**5** Using the keys, you can either divide or double the set speed.

HALF SPEED: Pressing 1x, the set speed will be divided in half – this can be done up to 8 times (The modification will be displayed above the left Encoder).

**1:1**: Resets the speed to the set value.

DOUBLE SPEED: By pressing this once the set speed will be doubled – this can be done up to 8 times (Modification will be displayed above the left Encoder.

**6** This key will bring you to the ASSIGN menu. ➠ **5.2** ASSIGN menu

**7** The Edit-CUE button allows you the modify values of individual Cues (LED in Edit key will blink) .
➠ **4.4.1** Changing values of individual Chaser steps

Above the encoders on the right screen, playback soft keys and the name of the chase are displayed. The functions of these soft keys are:

| | | |
|---|---|---|
| ***EDIT***: | Open edit menu for the chase | |
| ***LEFT ARROW***: | GO- | (Run backwards) |
| ***SQUARE***: | OFF | (Stop) |
| ***DOUBLE LINE***: | PAUSE | (Has toggle function) |
| ***RIGHT ARROW***: | GO | (Run forward) |
| ***PAGE X***: | Toggle between encoder functions. The important functions are on page 1. | |

As usual, a pushed and then turned encoder works with a different resolution, depending on the settings in the setup menu.
An encoder click ( push and release without turning) brings up a huge fader on screen.

**Encoder functions of page 1:**

***SPEED SCALE***: Divides or multiplies the speed with a factor.

***SPEED***: The speed of the chase. The accessible range depends on the speed scale. If the chase belongs to a speed group, changing the chases speed will affect the speed group ( also the other way around ).

***FADE***: Step by step INFADE time. Defines the smoothness of the running chase.

***MASTER FADE***: Controls master in & outfade. It is used when starting or switching off the running chase. With the encoder the „Master Fade“ can be set to “DEFAULT“. In this position the predefined M-Fade from the menu setup/defaults/playback timing will be used.

**Encoder functions of page 2:**

***SPEED GROUP***: Link chase to a speed group or let it have individual speed.

***OUTFADE***: Defines step by step OUTFADE time. With the encoder the OUTFADE can be set to always equal INFADE.

***SNAPDELAY***: Defines the trigger point for snapping channels in the chase.

## 4.4.1 Modifying values of separate Chaser steps

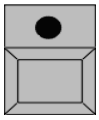
– Select the Cue to be modified in the Names column (red cell).

– Press the Edit 7 key (LED in Edit key will blink).

– **All values of the Cue will now be played back on stage and displayed (active, red) in the Channel & Fixture sheets.**

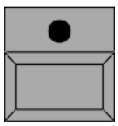
– This cue can now be modified by either direct access or by presets. ➠ **3.4** Direct Access to Fixtures (in the FIXTURE SHEET) / **3.5** Direct Access to Dimmer Channels (in the CHANNEL SHEET) and **3.7** Creating and calling up Presets

BLIND



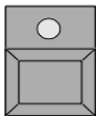
If the Cue is not to be seen on stage, activate the Blind function by pressing the BLIND key (integrated LED is on).

UPDATE



Press the UPDATE key once. Choose OK in the window that has just opened. The changed Cue is now stored.

CLEAR



Press the CLEAR key twice (Cue values will be deleted in the FIXTURE or CHANNEL window).

For modifying further Cues, select the respective Cue (Cue will be displayed on a green background).

Repeat all steps as described with the first cue and store with STORE.

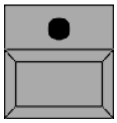
➠ **4.3.4** Copying Cues
➠ **4.3.5** Moving Cues
➠ **4.3.6** Deleting and renumbering Cues
➠ **4.3.7** Inserting LOOPs
➠ **4.3.8** Inserting Command Line Commands

## 4.5 Updatings Cues

When executing sequences, Cues can be modified and stored directly.

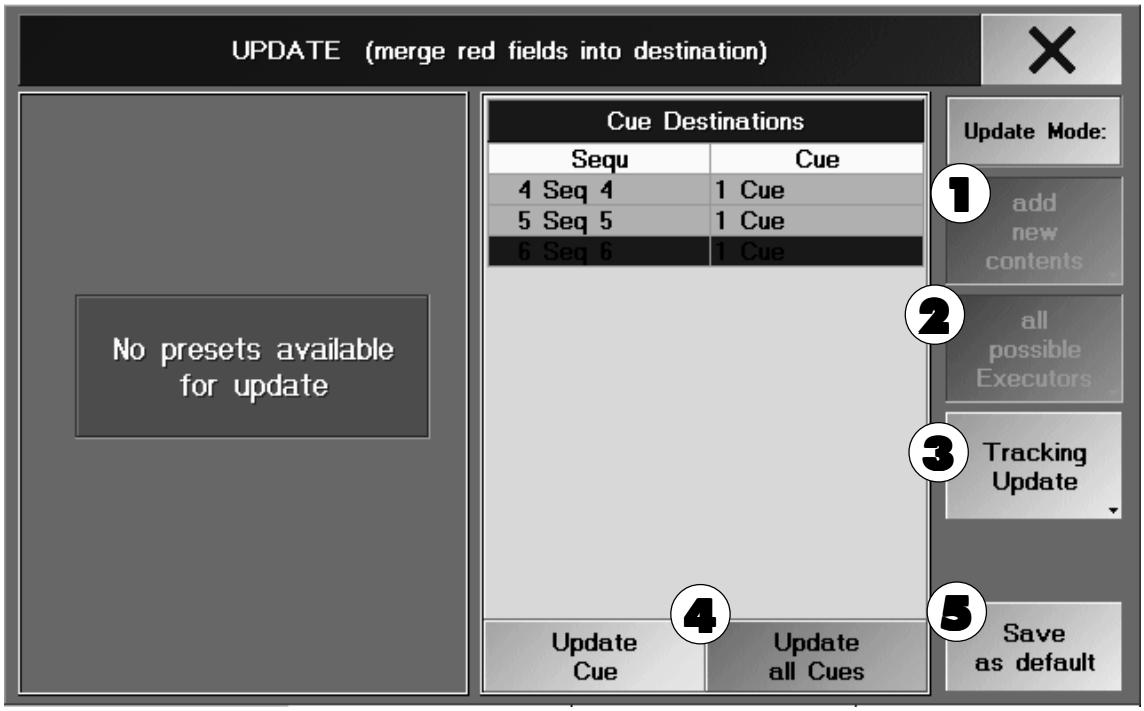
Playback the Cue to be modified. Modify the Cue by either direct access or via presets (UPDATE key LED is on). ➠ **3.4** Direct Access to Fixtures (in the FIXTURE SHEET) / **3.5** Direct Access to Dimmer Channels and **3.7** Creating and calling up Presets

**UPDATE**



Press the Update key once.

The UPDATE window will open




**1** By pressing this key, you can toggle between “only original contents“ and “add new contents“

Only original contents: Upon updating the cue, only the changes on fixtures/channels which have already been used in this cue will be stored.

Add new contents: Upon updating the cue, all changes will be stored regardless at to whether those fixtures/channels have already been used in this cue.

**2** By pressing this key, you can toggle between “only last called Executor“ and “all possible Executors“.

Only last called Executor: The“Cue Destinations“ chart only shows the last played back cue.

All possible Executors: The “Cue Destinations“ chart shows all currently playing back cues on all executors.

**3** “Tracking“ or “Cue Only“ Update. A “tracking“ update may affect “cues in the future“ while a “cue only“ update does not affect them.

**4** Pressing the “Update Cue“ key will update that cue being displayed with a red background. You can select another cue using the encoder.

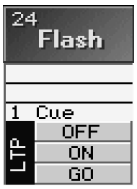
Pressing the “Update All Cues“ key will update all cues listed in the chart.

**5** Pressing the Save as default button will save the (pre) sets as default settings (e.g.: Only original contents or Add new contents). The next time you open the Update menu, these settings will be available.

# 5 Executing Cues, Sequences and Chasers

## 5.1 ASSIGN menu (Assignment to EXECUTOR)

Cues, Sequences or Effect Groups can be assigned to any EXECUTOR fader or button.



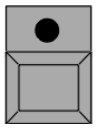

One way to enter the ASSIGN menu is by a mouse click or using the touch screen on the title bar of the EXECUTOR FADER window.

**Or:**

Press the ASSIGN key once (LED is on).

Select a Sequence in the Sequence Pool, or an Effect Group in the Effect Pool.

**ASSIGN**



Press the EXECUTOR FADER or EXECUTOR button, to which you want to assign a Sequence or Chaser.

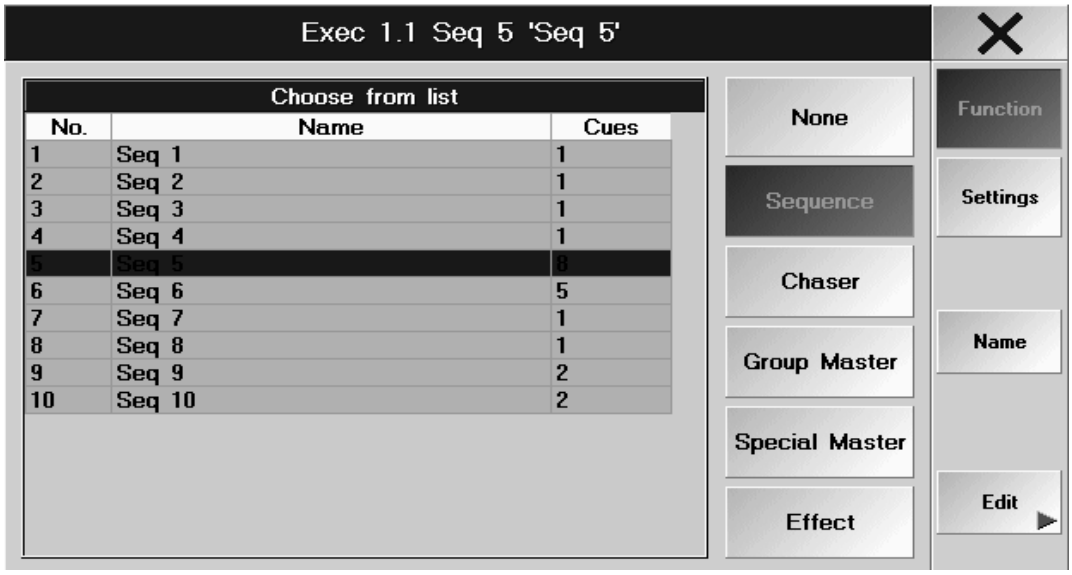
**Or:**

Press the ASSIGN key once (LED is on).

Press the EXECUTOR FADER or EXECUTOR button, for which a Sequence or Chaser is to be created. The ASSIGN menu will appear in the middle TFT display.

Another way to enter the ASSIGN menu is via the EDIT menu.

The title bar will display the selected EXECUTOR FADER or BUTTON.




### 5.1.1 Assigning Sequences or Effect Groups

The “Function” key must be activated (dark background).

By pressing the CHASER, SEQUENCE or EFFECT key, all created Sequences will be listed in the Sheet. Select the Sequence or Effect Group to be assigned. Assigned Sequences or Effect Groups are displayed in red.

The CUES column shows the number of Cues in the individual Sequences.

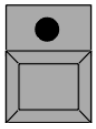
By pressing the key “Edit“, you can customize the assigned Sequence or Effect Group in the EDIT menu. ➠ **4.3** or **4.4** Editing Cues, Sequences or Chasers. ➠ **6.2** Editing Effect Groups

### 5.1.2 Changing Sequence Names

By pushing the key “Name“ the a sequence can be renamed using the keyboard.

**or:**

**ASSIGN**



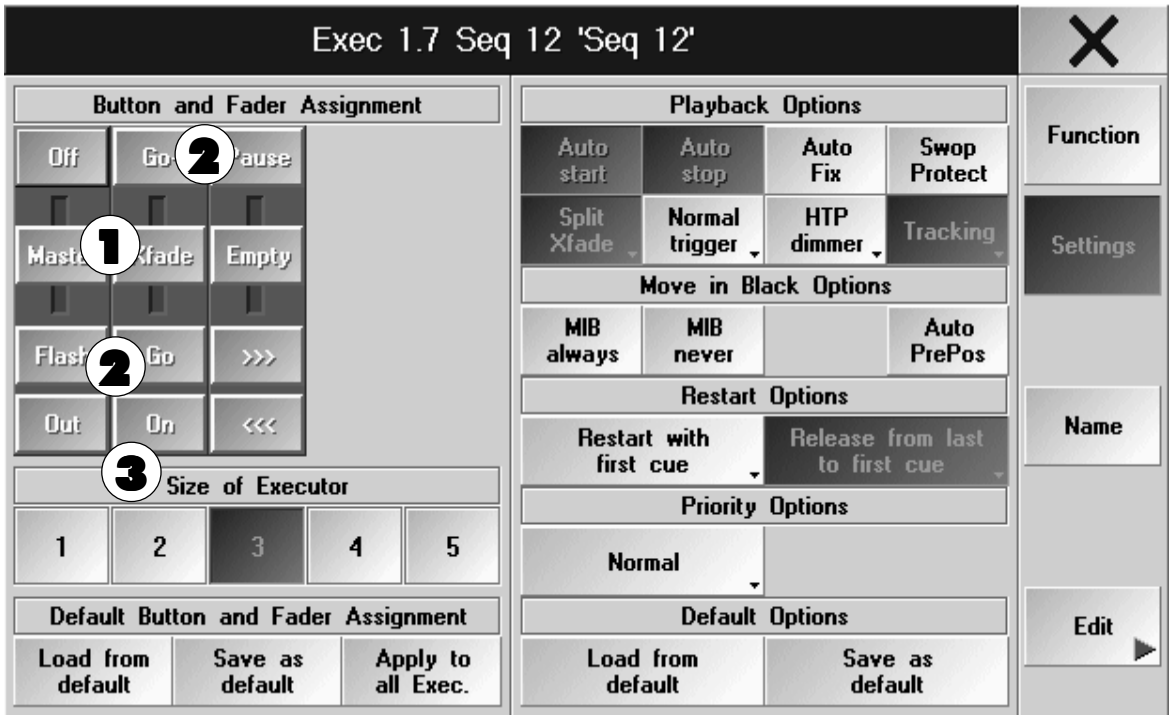
Push ASSIGN key 2x (LED is on).

Push the executor button, where the name of the sequence should be changed.

A window appears, where you can now enter the new name.

## 5.1.3 Changing Button and Fader Functions

The “Settings” key must be activated (dark background).




**1** When touch on the FADER symbol key, a selection will appear where you can assign the respective function to the Fader by another touch.

- Master: The Fader controls all programmed dimmer values of this Sequence.
- Swap: With the Fader, HTP channels in the sequence can be faded in and **all** other HTP values not used in this sequence are set to “0”

**It is only possible to use the SWAP *or* Master fader.**

- FADE: With the Fader, the fade-in time between cues can be set manually, when using Chasers.
- Speed: Chaser speed can be set with the Fader.
- Xfade: With the Fader, you can manually crossfade all parameters in to the next cue of the sequence.
- XF A: If Split Crossfade is active, you can fade out the Cue that is currently playing back when pushing the fader upwards or downwards (➠ **item *5***).
  If Split Crossfade is **not active**, you can fade out to the darkening Dimmer channels of the next Cue when pushing the fader upwards or downwards.
- XF B: If Split Crossfade is active, you can use the Fader to fade in the next Cue when pushing the fader upwards or downwards (➠ **item 5**).
  If Split Crossfade is **not active**, you can fade out to the next Cue and to the brightening Dimmer channels when pushing the fader upwards or downwards.
- Empty: Fader has no function.
- Rate: Using the Fader, you can change all fade and delay times for sequences. If the fader is at 50%, all times will be executed in the normal way. Using the RATE 1 button, you can automatically set the Fader back to the 50% position.
- MFade: This fader controls master in & outfade in a range from 0 to 10 seconds. It is used when starting or switching off the running chase. With the encoder the „master fade“ can be set to “DEFAULT“. In this position the predefined MFade from the menu setup/defaults/playback timing will be used.
- Temp: Use the Fader to temporarily fade in the first Cue(step), then, the previous status will be restored, similar to the „Temp“ key.

**2** By a touch on the respective KEY symbol, a selection will appear in which any button can be allocated with different functions.

- Go: The cue will be played back with all programmed FADE and DELAY times.
- Go–: For sequences, the previous cue is played back and all changes are executed (full tracking) using all programmed FADE and DELAY times. For Chasers, the running direction will be reversed.
- Pause: A running cue or a Chaser will be temporarily stopped. To continue use GO+ or GO–.
- On: Reasserts the priority of the Executor making it the latest action thus overriding other executors which were previously overriding it (LTP).
- Off: Switches the Executor off so that it no longer outputting cue data to stage.
- Rate 1: Puts the RATE FADER to 50% position (➠ **item 3 RATE Fader**).
- Learn: Direct entering of the Chaser speed. When pressing this button at least three times, the Chaser speed is set.
- <<<: Playback of the previous cue without FADE or SNAP times.
- >>>: Playback of the next cue without FADE or SNAP times.
- Temp: A Cue or chaser plays back as long as the button is pressed. Upon releasing the button, previous condition will be restored.
- Top: Resets the Sequence to the first cue.
- Empty: Button has no function.
- Flash: Sets the Dimmer channels in the current cue to 100% of their programmed value. Starts the sequence, if not already activated.
- Out: Sets the Dimmer channels in the current cue to 0% of their programmed value. Starts the sequence, if not already activated..
- Toggle: To switch on and off the Sequence or Chaser.
- Fix: Will fix sequence or chaser on this executor, even when switching PAGES here (this will be displayed by an orange background in the small EXECUTOR window).
- Load: Pressing the button on the right TFT display will open a chart for this sequence where you can select and directly load the next cue to be played back in the sequence (LOAD CUE). Start the cue using the GO button.
- Select: Makes this executor the Master Sequence.
- Swop: As long as the button is pushed all other dimmer channels are faded out, except with executors, where „Swop Protected“ has been activated.

**3** With the Size of Executor buttons 1 – 5, you can define how many faders and buttons are available for controlling your sequence on EXECUTOR FADERs, and whether one to five buttons could be used for EXECUTOR BUTTONS. The respective titles will be displayed on the TFT display above the EXECUTOR FADERS. When the LIST function is active, the function of the EXECUTOR buttons will be displayed above these buttons (press LIST key).

## Default Button and Fader Assignment

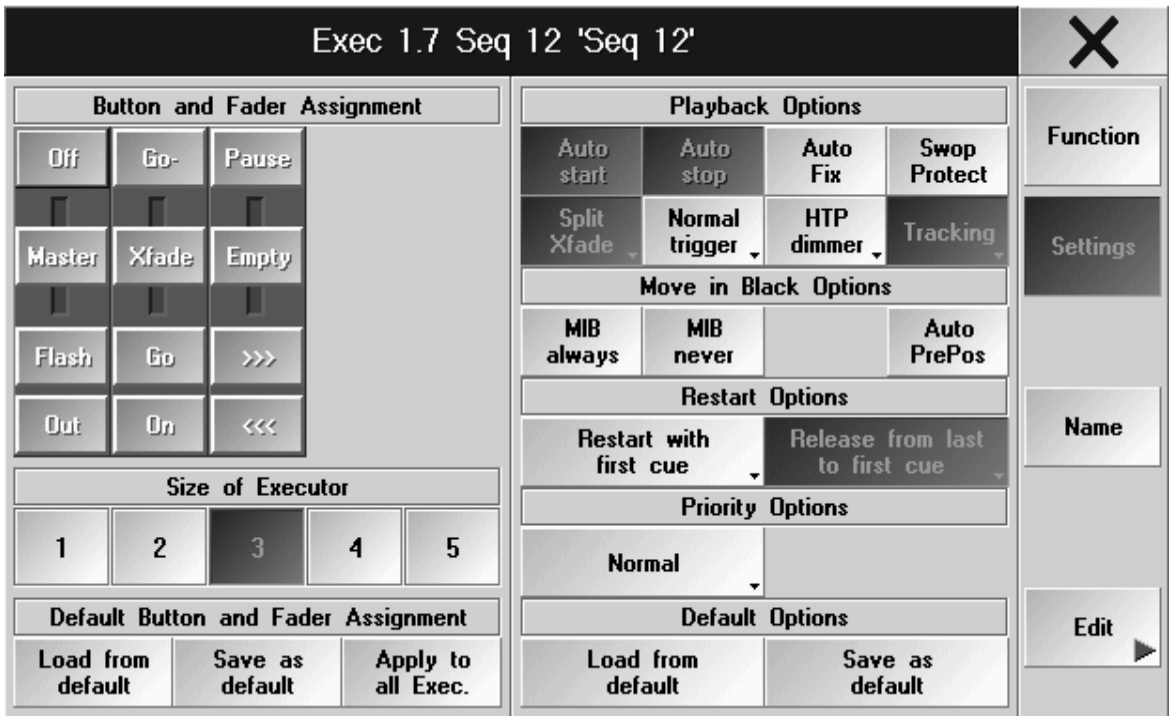
Pressing the “Save as default“ key will store the current settings as default settings in the Default Button/Fader menu. For each option (1-5 Faders or 1-5 Buttons, Sequences or Chasers), there is a default that can be stored.

Pressing the “Load from default“ key will load the stored default settings and use them for this Executor.

Pressing the “Apply to all Exec“ will overwrite ***all*** Fader or Button Executors. The prerequisite is, however, an identical number of Fader and Button assignments.

## 5.1.4 Playback Options

The “Settings“ key must be pressed (dark background).




If you press the “Auto start“ key (background dark gray), the Sequence or Chaser will be automatically started when pushing the Master Fader upwards (item 6).

If the “Auto stop“ key is pressed (dark gray background), the sequence or Chaser will automatically be switched off when pushing the master fader downwards to the lower stop.

If ***„Auto start“*** is active (dark background) and ***„Auto Stop“*** is not active, the fader gets the function „***Auto On***“, this means that when the fader is moved up wards from 0-position, simultanously the function „On“ is activated and the sequence is reactivated.

If the “Auto Fix“ key is pressed (dark background) and the Sequence or Chaser is started, this Executor will be locked to that position when switching the Executor pages and will **only be released when it is switched off**. If an Executor is stored at that position on another page, this Executor will appear and can be used again only after switching the locked Executor off.

If the “Swop Protected” key is pressed, the Dimmers of this Sequence will not be switched off, when ***another*** Sequence is called up using Swop.

If the TRACKING key is pressed (dark background), the Sequence will be executed in Tracking mode. If the key is not pressed, the Sequence will be executed in Non Tracking mode.

The **TRACKING** mode is normally used for **theatre applications**.

Values that were played back in a Cue, remain unchanged for each susequent Cue, until they are modified or overwritten by a later Cue (LTP principle). Therefore, you do not have to program values which do not change into later cues.

**TIP** Example: At the beginning of a Sequence, Dimmer channels are set to 80%. Let’s assume that the setting is to be used for several cues. As long as the channels are not modified, they will remain at 80%. When working with this Sequence, you may recognize, however, that the channel setting should only be at 70%. Now, you only have to change this channel setting **once**; all subsequent Cues will automatically be “modified” to 70%.

Example: Cue 10 is made up of the changes programed in cue 10 as well all the changes in cues1 thru 9 with the later values taking presedence over the earlier values - Latest Takes Presedence (LTP)

In **NON TRACKING** mode values will return to their defaults unless they are specifcally given a value in that cue.

Example: Cue 10 is made up of only the information in Cue 10. Modications to earlier cues will have no effect on later cues. Essentially cues no longer have a relationship between each other. ➡ **5.4** TRACKING window

**Key A/B or Split Xfade:** If the "Split Xfade" key is pressed (displayed in dark), this function is active (➠ **item 5.1.3** Changing Faders, Fader XF A and XF B).

**Key Normal trigger** If the „Normal Trigger" key is pressed, this Sequence/Chaser will be execute with the programmed triggers calls. Pressing this key, it will switch to „Trigger is GO", where after the Sequence/Chaser can only be controlled by the GO button and will ignore Follow, Sound and trigger times.

**LTP Dimmers** key pressed: When playing back this sequence, dimmer channels programmed into this sequence will override all other (LTP Dimmer) instances of these channels being played back, regardless of level. They will overwrite all other dimmer channels of those Cues that were also called up in LTP mode. HTP Executors remain unchanged.

## Move in Black Options

**MIB Always** key pressed: Cues in which fixture intensity changes from zero and also change other parameters , for example, a different position, color or gobo, etc., will have these values "preset" so that live changes will not be seen on stage. You can also set a FADE or DELAY time for these channels (➠ **2.13** Settings in the Defaults Menu / Playback Timing).

**MIB Never** key pressed: Cues which have separatly activated cues MIB fuctions are completely switched off (➠ **4.3** Edit Sequences).

**Auto PrePos** key pressed: The automatic prepositioning system will perform a move in black upon executor start. Therefore all non-dimmer channels come up with zero fadetime and delay if the corresponding fixture was dark when the executor was started. Switching off an executor with the Auto PrePos function enabled, tries not to destroy the "stage look", only dimmer channels are fading out.
When deactivating this sequence, the channels will be altered only after the respective dimmer has been set to 0.

## RESTART OPTIONS

If the "Restart with first cue" key is pressed, the Sequence will restart always with the **first** cue.

If the "Restart with actual cue" key is pressed, the Sequence will restart exactly where it was switched off the last time.

If the "Restart with next cue" key is pressed, the Sequence will restart one cue after where it was switched off.

If the "Release from last to first cue" key is pressed, tracked values are released when the executor jumps back to the first cue.

## PRIORITY OPTIONS

There are 3 priorities: Low (lowest), Normal (middle) and High(highest). Executors having a higher priority, cannot be overwritten by Executors of a lower priority. In general, this applies only for LTP functions.

For **LTP** Executors, you can choose **Off On Overwritten** additionally. When all functions of this Executor have been overwritten by other Executors, this one will switch off.

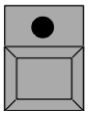
## Defaults Options

Pressing the SAVE AS DEFAULT key will save the current settings as default settings.

Pressing the LOAD FROM DEFAULT key will load the saved default settings and use them for this Executor.

## 5.1.5 Assigning Group Masters

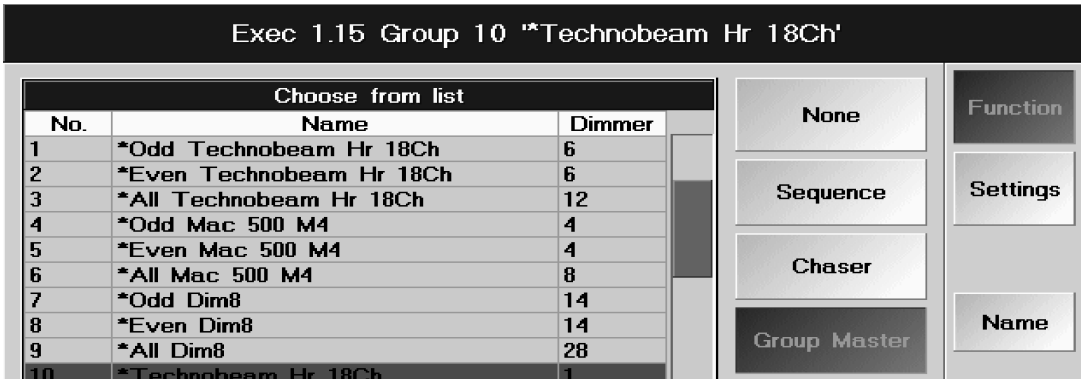
ASSIGN



Press the ASSIGN key once (LED is on).
Select a group in the GROUP Pool.
Press an EXECUTOR FADER button, to which the group is to be assigned to.

**Or:** Using the ASSIGN menu:

The "Function" key must be activated (dark background).



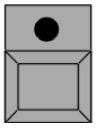

If the GROUP MASTER key is pressed, the Sheet will display all created groups.

Select the group to be assigned. Assigned groups are displayed in red. The DIMMER column will show the number of Dimmer channels used by the Fixtures and Dimmers.

### Changing Group Names

By pushing the key "Name" the name of the group assigned to the executor can be changed by using the keyboard.

ASSIGN



**or:**

Push the ASSIGN key 2x (LED is on).

Push the executor button, where the name of the group should be changed.
A window appears, where you can now enter the new name.

**or:**

in Group Pool ➡ **3.3** Creating and calling up Fixtures and Dimmer GROUPS

### Submaster Options

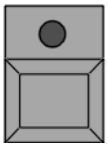
The "Settings" key must be pressed (dark background).

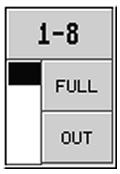
If the POSITIVE ENABLE key is pressed, this Group Master is the Master Fader for all dimmer channels of this group.

**If a Group Master is set as INHIBIT Master (NEGATIVE INHIBIT key is pressed) for a group that includes Fixtures or dimmer channels from other groups, this INHIBIT Master must also be pushed up, to be able to use the overlapping channels. The INHIBIT Master has priority over other group masters and can also be used as Master Fader for all other Group Masters.**

### Group Overview

GROUP






Pressing the GROUP key twice will open an overview in the right display showing all assigned Group Masters. In this overview, every Group Master is displayed with a separate small window.

The top key contains the group name. Clicking on this key will open the Page on which it is stored. The display above the Fader shows „HERE".

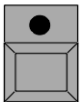
With the FULL key, you can set the Master to 100%. With the OUT key, you can set the Master to „0". The yellow status indicator next to the keys will give you the currently set value for the respective Fader.

Pressing the ALL FULL key in the title bar will set all group masters to 100%.

Pressing the CLOSE key will close this window.

## 5.1.6 Assigning Special Masters

ASSIGN



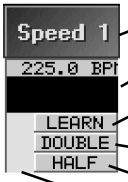
Press the ASSIGN key once (LED is on).
Press an EXECUTOR FADER button, to which a Special Master is to be assigned to.

The “Function“ key must be pressed (dark background).

If the SPECIAL MASTER key is pressed, all CHASER SPEED Masters will be displayed.

Select which CHASER SPEED is to be assigned.

The following window will appear above the assigned Executor fader:

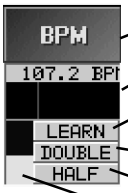



The name of the Speed Group.
The speed.
With the top button, you can enter a speed directly. By pressing the button at least twice, you can set the speed.
With the button below the fader, you can double the speed.
With the bottom button, you can halve the speed.
The speed of the Speed Group can be adjusted by using the Fader.

If **SOUND : BPM** is selected, you can adjust the given BPM value in the Sound menu using the fader (➡ **2.14** Sound Signal Settings). The Sound Menu will open by touching the lower part of this window (not the headline).

**or:**

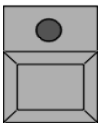
If **SOUND : HOLD** is selected, you can adjust the given HOLD value in the Sound menu using the fader (➡ **2.14** Sound Signal Settings). The Sound Menu will open by touching the lower part of this window (not the headline).




The name of the fader function.
The speed.
With the top button, you can enter a speed directly. By pressing the button at least twice you can set the speed.
With the button below the fader you can double the speed.
With the bottom button you can halve the speed.
You can adjust the BPM / HOLD value with the fader.

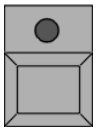
## 5.1.7 Moving, copying or deleting Executors

MOVE



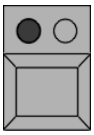
Press the MOVE key once to move Executors (LED is on).

COPY



**Or:**

Press the COPY key once to copy Executors (LED is on).

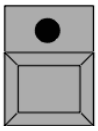


19

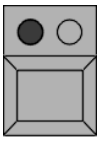
To move or copy an Executor button or a window above the Executor, press or click on it once.

Pressing another Executor button or window above the Executor will set the new position.

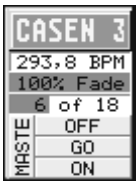
DELETE



Press the DELETE key once to delete Executors (LED is on).



19




Press an Executor button or on a window above the Executor once.

**If there are programmed Macros or Timecode Shows, in which the moved or deleted Executors were to be used, these assignments may no longer work!**

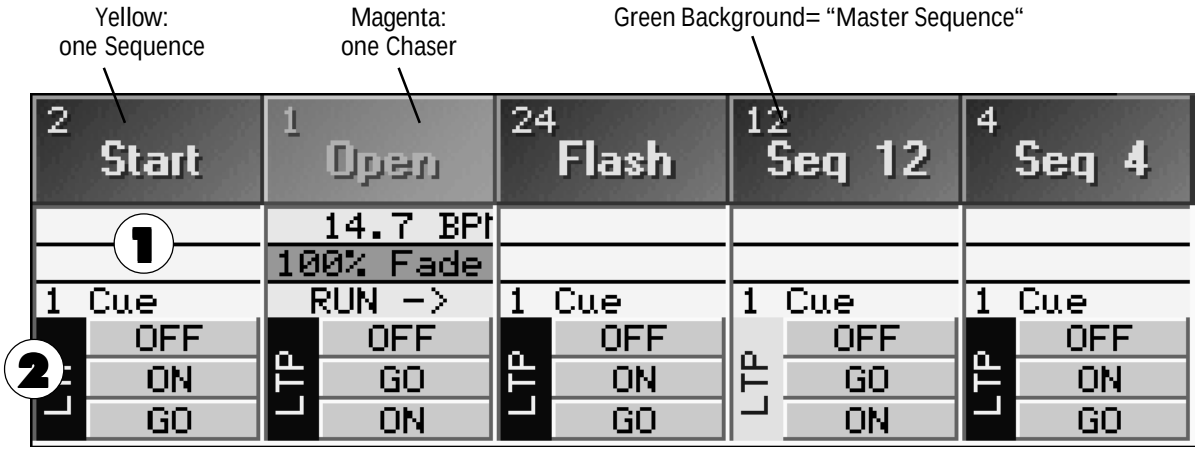
## 5.2 Small EXECUTOR Window

***grandMA:***

These windows are located above every EXECUTOR FADER or, after pressing the LIST key twice, in the right TFT display for the EXECUTOR buttons.

***grandMA* light und ultra-light:**

After pressing the LIST FADERS key, these windows will be displayed above each of the EXECUTOR FADERS.
After pressing the LIST KEYS key twice, they will be displayed on the TFT display for the EXECUTOR buttons.




**1** The name of the assigned sequence is displayed in the headline. The shown figure displays the number of the sequence.

Touching the **Sheet** (not the header) on the touch screen or using the left mouse key will open the EDIT menu. ➠ **4.3** Editing Sequences or **4.4** Editing Chasers

Touching the **title bar** on the touchscreen or using the left mouse key will open the ASSIGN menu. ➠ **5.1** ASSIGN menu

The current section from the Cue Sheet will also be displayed:

**Sequence:** The Outfade time of the last Cue will be displayed by a blue bar in the upper cell.

The Infade time of the cue will be displayed in the second cell.

The next Cue will be displayed in the next cell below.

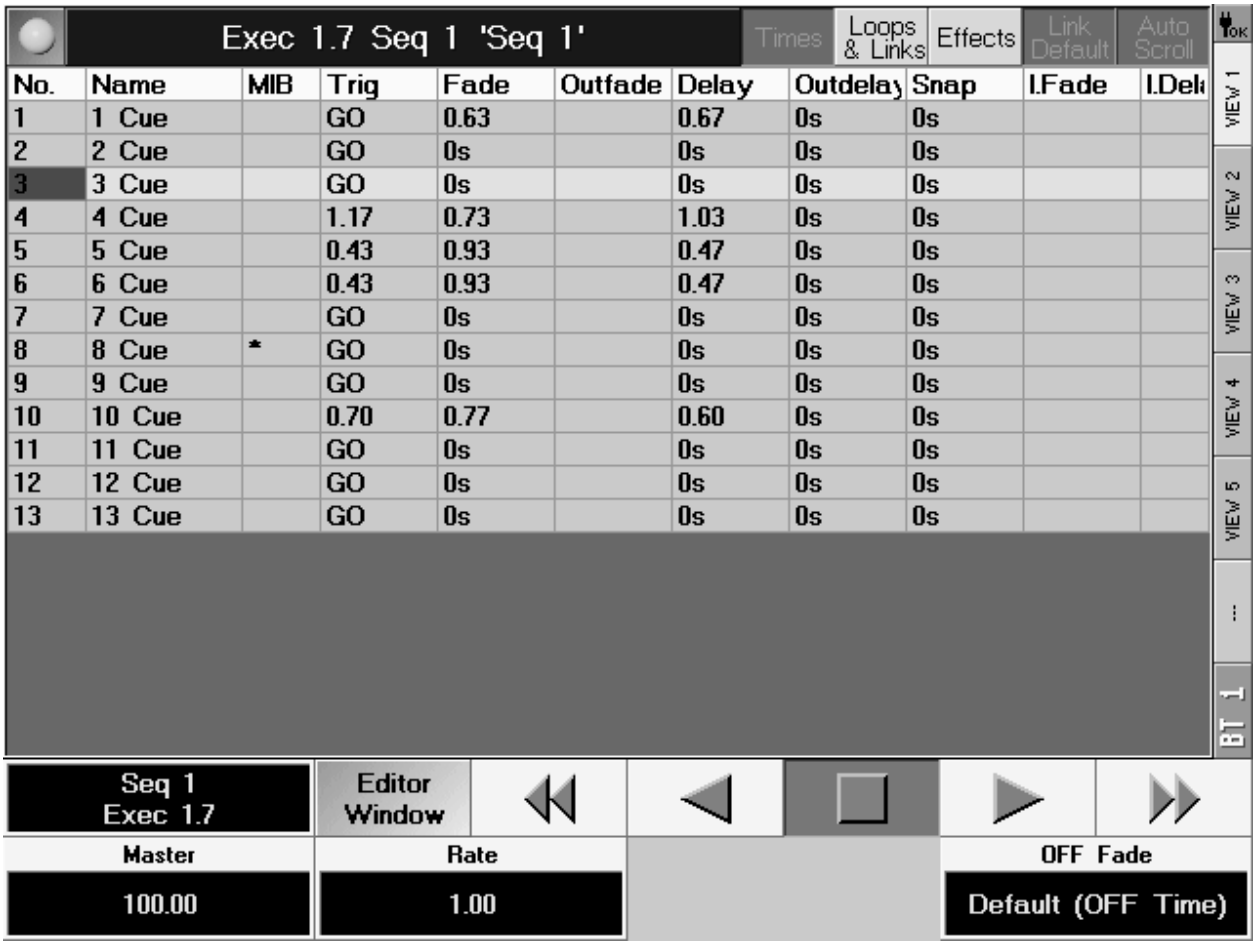
**Chaser:** The speed will be displayed in the upper cell.
The Fade time in percentage will be displayed in the second cell and also as a green bar.
Whilst the Chaser is not activated, you will find the type of activation in the bottom line. During execution, the number of Cues that have completed will be displayed on the left while on the right side you will see the total number of all Cues, which is also being displayed graphically by a bar.

**2** The individual Fader and Button functions are displayed here:

- On the left side, the function of the fader is displayed. The yellow status indicator will give you the current fader level.
- The function for the button above the fader is displayed at the top.
- The function of the button below the Fader is displayed in the middle cell.
- The function of the lower button below the Fader is displayed in the lower cell.

## 5.3 EXECUTOR Sheet

In the EXECUTOR sheet, you can see the sequence assigned to a FADER or BUTTON while allowing you to perform modications to cues and cue data. ➠ **3.1** Creating a window




| No. | Name | MIB | Trig | Fade | Outfade | Delay | Outdelay | Snap | I.Fade | I.Del |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 Cue | | GO | 0.63 | | 0.67 | 0s | 0s | | |
| 2 | 2 Cue | | GO | 0s | | 0s | 0s | 0s | | |
| 3 | 3 Cue | | GO | 0s | | 0s | 0s | 0s | | |
| 4 | 4 Cue | | 1.17 | 0.73 | | 1.03 | 0s | 0s | | |
| 5 | 5 Cue | | 0.43 | 0.93 | | 0.47 | 0s | 0s | | |
| 6 | 6 Cue | | 0.43 | 0.93 | | 0.47 | 0s | 0s | | |
| 7 | 7 Cue | | GO | 0s | | 0s | 0s | 0s | | |
| 8 | 8 Cue | * | GO | 0s | | 0s | 0s | 0s | | |
| 9 | 9 Cue | | GO | 0s | | 0s | 0s | 0s | | |
| 10 | 10 Cue | | 0.70 | 0.77 | | 0.60 | 0s | 0s | | |
| 11 | 11 Cue | | GO | 0s | | 0s | 0s | 0s | | |
| 12 | 12 Cue | | GO | 0s | | 0s | 0s | 0s | | |
| 13 | 13 Cue | | GO | 0s | | 0s | 0s | 0s | | |

Touch the left corner of the title bar you can open the EXECUTOR SHEET OPTIONS window.

In this options window, you can select which Sequence is assigned to the executor by clicking on it. With the FONT SIZE key, you can toggle the font size used in the EXECUTOR sheet between Huge, Big and Small. With the DELETE WINDOW key, you can delete the Executor sheet or close the Options window using the CLOSE key.

In the EXECUTOR sheet, you can watch the progress of the sequence; the currently playing back Cue will be displayed by a yellow background.

You can modify the MASTER fader using the left Encoder or by pressing the button above it.

Using the „RATE FACTOR“ Encoder, you can temporarily adjust all FADE and DELAY times. If the Sequence is switched off, the RATE FACTOR will automatically be reset to 1.

You can set the time to be used when switching off (OFF key) using the right Encoder or by pressing the button above it. If Default is displayed, the default time will be used ➠ **2.13** Default Menu

Using the “Arrow right“ or “Arrow left“ buttons, you can call up the next or previous Cue. With the double arrow, you can call up the previous or next Cue without any FADE or Delay times. With the STOP button, you can switch off this sequence.

By pressing the Edit Window button, you open the assigned sequence in the Edit menu. ➠ **4.3** Editing Sequences

If the LOOPS key is pressed, the programmed jumps and commands will be displayed in the Sheet. If the EFFECTS key is pressed, the calls of the Effect Groups are displayed. ➠ **4.3** Editing Sequences

If the LINK DEFAULT key of the title bar is pressed, the default sequence will automatically be transferred to the EXECUTOR window when changing the default sequence. (Assigning the Default sequence ➠ **1.7** Layout and Controls (items 9 and 10))

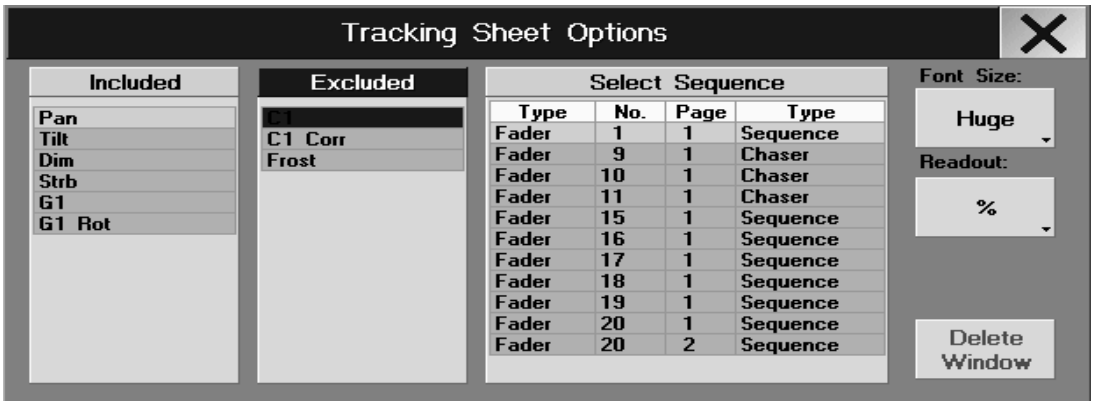
If you press the AUTO SCROLL key, the Sheet will be automatically moved upwards/downwards when working with larger Sequences.

## 5.4 TRACKING Sheet

In the Tracking sheet, all values and times/durations of a Sequence can be displayed and modified.

Create a Tracking Sheet. ➠ **3.1** Creating windows

Touch the left corner of the title bar, you can open the TRACKING SHEET OPTIONS window.

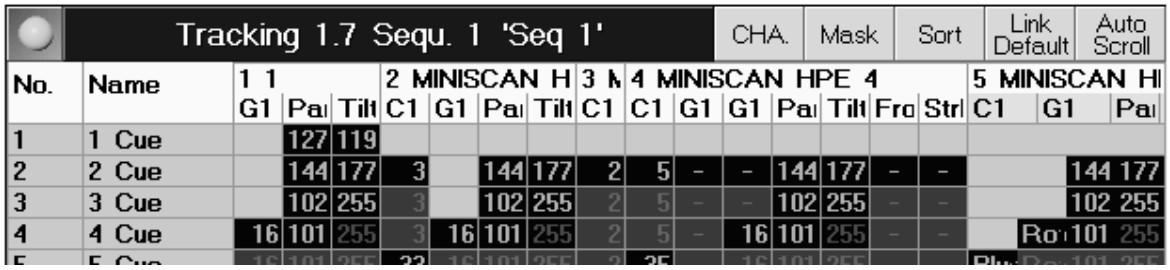



In this window, you can select sequences to be displayed in the Tracking sheet by clicking on them.

In the INCLUDED Sheet, all of the parameters of the Fixtures used in this Sequence are displayed. By clicking on a parameter, you can move it into the EXCLUDED sheet. Parameters displayed in this Sheet will **not** be displayed in this Tracking Sheet. With this function, you obtain a better overview for the Tracking Sheet when pressing the MASK key.
With the FONT SIZE key, you can switch the font size used in this window between LARGE and SMALL.

By pressing the % key (DEC or HEX) you can switch the display of values between percent, decimal or hexadecimal values.

With the DELETE WINDOW key, you can delete the Executor window or close the OPTIONS window using the X key.




In this window, you can watch the progress of the sequence; the currently playing back Cue will be displayed by a yellow background.
Colour codes used in the tracksheet:

| | |
|---|---|
| Text CYAN: | New values or values that have changed in this cue. |
| Text MAGENTA: | Tracked values; these will not change in the next Cue and are not stored |
| Text GREEN: | Downfading dimmer values |
| Text RED: | “Blocked“ values. |

If the FIX key is pressed (dark background), all **selected** Fixture parameters will be displayed first in the Sheet.

If the key is not pressed (indicated by a CHA), the Sheet will display all functions **regardless of their selections**. When selecting presets, the Fixtures/Dimmers will be sorted accordingly in the Tracking Sheet.

If the MASK key is pressed, the INCLUDED/EXCLUDED functions will be activated in the OPTIONS menu.

If the SORT key is pressed (dark appearance), the Fixtures/Dimmers will be sorted by selection and parameter. When selecting groups or presets, the Fixtures/Dimmers will be sorted accordingly in the Tracking Sheet.

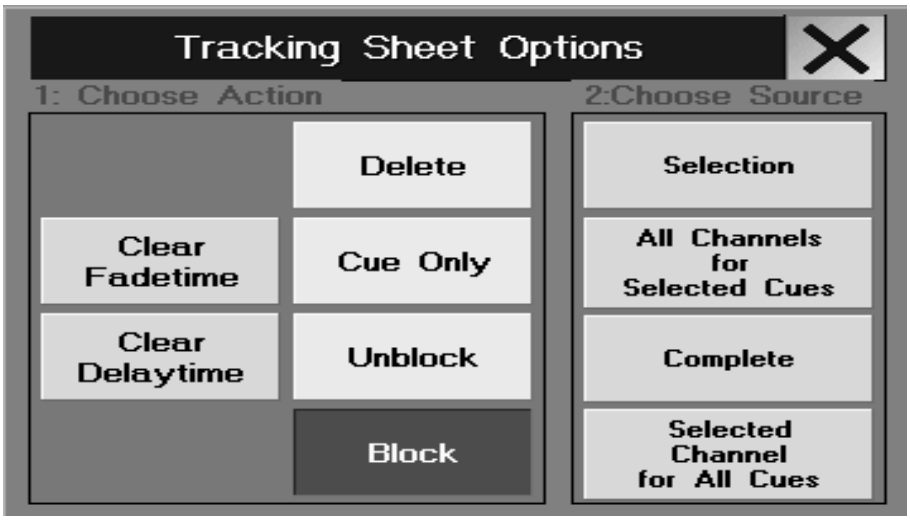
If the LINK DEFAULT key of the title bar is pressed, the default sequence will automatically be transferred to the EXECUTOR window when changing the default sequence. (Assigning the Default sequence ➠ **1.7** Layout and Controls (items 9 and 10))

If the AUTO SCROLL key is pressed, the Sheet will be automatically moved upwards/downwards when working with larger Sequences.

Using the left mouse key, you can select values or times/durations (also by using the “lasso function”). Values and times/durations can be modified using the middle mouse key. If you click and drag with the left mouse key and then click with the middle button on the selected values, a window will open where you can enter values directly.
To modify presets, must make a middle mouse click on the preset. A window will open where you can enter values or load other presets direclty.

This is one of the few menus where using the mouse is the only method that makes sense.

The following window will open if you make a right mouse click on a selected value.




Use this window in the following manor:

1. Select one or more cells in the Tracking Sheet
2. Choose the DELETE, CUE ONLY, UNBLOCK or BLOCK command
3. Execute the command by choosing the source (Selection, All Channels of Selected Cues, Complete or Selected Channels for All Cues).

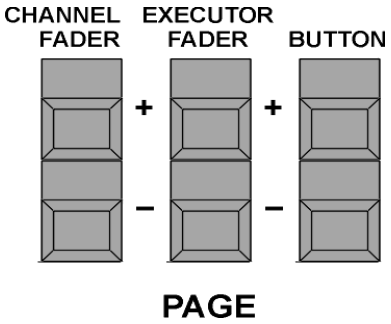
DELETE: Will remove all values.

CUE ONLY: Will copy the values of the previous step into the following step (that step must be empty).

BLOCK: With BLOCK, tracking values (magenta) can be converted into “stored values”. Theses values will be displayed in red.

UNBLOCK: Converts blocked / stored values to tracking values (magenta).

# 5.5 Page Administration




If you are in Channel Mode, the name of the currently accessible PAGE of channel faders appears on the touchscreens between the small channel windows above your faders. ➠ **3.5.1** CHANNEL Mode.

If you are in Executor Mode, the name of the currently accessible PAGE of executor faders appears on the touchscreens between the small executor windows above your faders

After pressing the LIST key once, the currently accessible PAGE of EXECUTOR BUTTONS appears at the bottom of the right display including the name between the small executor windows.

Using the PAGE + & - keys you can open the access PAGES. Remember all pages output at once so changing page so no effect on playback, only on what you currently have access to.

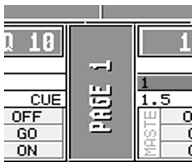
**Or:**

Hold a PAGE button down, for which another is to be called up. While holding down a button, the EXECUTOR Button LEDs will indicate the current PAGE you are on (Example: If LED 28 is flashing, PAGE 8 is selected). By pressing another button you can switch to a different PAGE.

## 5.5.1 Channel Page

When pressing both PAGE keys of the Channel Mode simultaneously the display will show a summary of the CHANNEL PAGES.

**Or:**

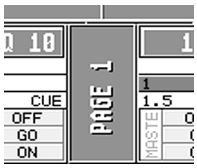



If in Channel Mode, you can call up the summary for all Channel Pages by pressing the PAGE Keys in the display. By clicking on the respective PAGE Keys you can call up the PAGE.

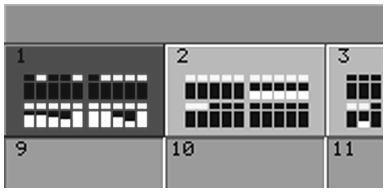
## 5.5.2 Executor Fader Page

When pressing both PAGE keys for the Executor Faders simultaneously the display will show a summary of the Executor Fader Pages.

**Or:**




If in EXECUTOR FADER Mode, you can call up the summary for all EXECUTOR FADER Pages by pressing the PAGE Keys in the display. By clicking on a PAGE Key you can call up the respective PAGE.

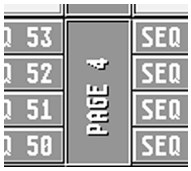



The individual Faders are indicated by symbols in the respective PAGE Keys. The yellow bar graph will give you the currently set value for the respective Fader. If there is a green square above the Fader symbol, a Sequence, a Group or a Special Master is allocated to this Executor Fader. If this square is yellow, the Sequence or Chaser is active.

## 5.5.3 Executor Button Page

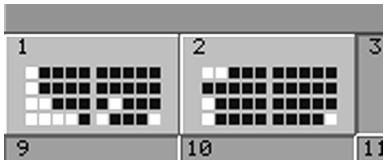
When pressing both PAGE keys for the Executor Buttons simultaneously the display will show a summary of the EXECUTOR BUTTON Pages.

**Or:**



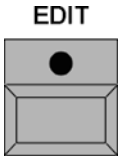

After pressing the LIST key once, the TFT display will show a listing of the Sequences assigned to the Buttons, and in the middle a PAGE Key with the currently called-up EXECUTOR Page.

You can call up the summary for all EXECUTOR BUTTON Pages by pressing the PAGE keys in the display. By clicking on a PAGE key you can call up the respective PAGE.

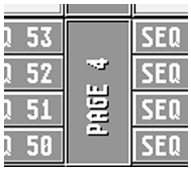



The keys are indicated by symbols in the respective PAGE keys. If there is a green square, a Sequence, a Group or a Special Master is allocated to this Executor Button. If this square is yellow, the Sequence or Chaser is active.

## 5.5.4 Edit PAGE Name




Press the EDIT key once.




Select the PAGE key on the display.

The EDIT NAME window will open. Enter a name using the keyboard and confirm with ENTER.

## 5.5.5 Copying, moving and deleting Pages

### Copy or move a Page containing the Executor faders *or* buttons

Press the COPY key once to copy Pages (LED is on).

**Or:**

Press the MOVE key once to move Pages (LED is on).
Press the PAGE key once (LED is on).
„**2**“ for Executor fader or „**3**“ for Executor buttons (enter via numeric keypad).
Press the „**.**“-(dot) key and then enter the page number.
Press the AT key (LED is on), enter the number of the target Page and confirm with ENTER.

### Copy or move complete Pages with Executor-Faders *and* buttons

Press the COPY key once to copy Pages (LED is on).

**Or:**

Press the MOVE key once to move Pages (LED is on).
Press the PAGE key once (LED is on).
Enter the page number.
Press the AT key (LED is on), enter the number of the target Page and confirm with ENTER.

### Delete Pages with Executor faders *or* buttons

Press the DELETE key once to delete Pages (LED is on).
Press the PAGE key once (LED is on).
„**2**“ for Executor fader or „**3**“ for Executor buttons (enter via numeric keypad).
Press the „**.**“-(dot) key and then the page number; confirm with ENTER.
A window will open; here, confirm the deleting operation with the DELETE key.

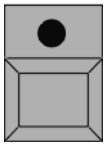
### Deleting Pages with Executor fader *and* buttons

Press the DELETE key once to delete Pages (LED is on).
Press the PAGE key once (LED is on).
Enter the page number on the keypad and confirm with ENTER.
A window will open; here, confirm the deleting operation with the DELETE key.

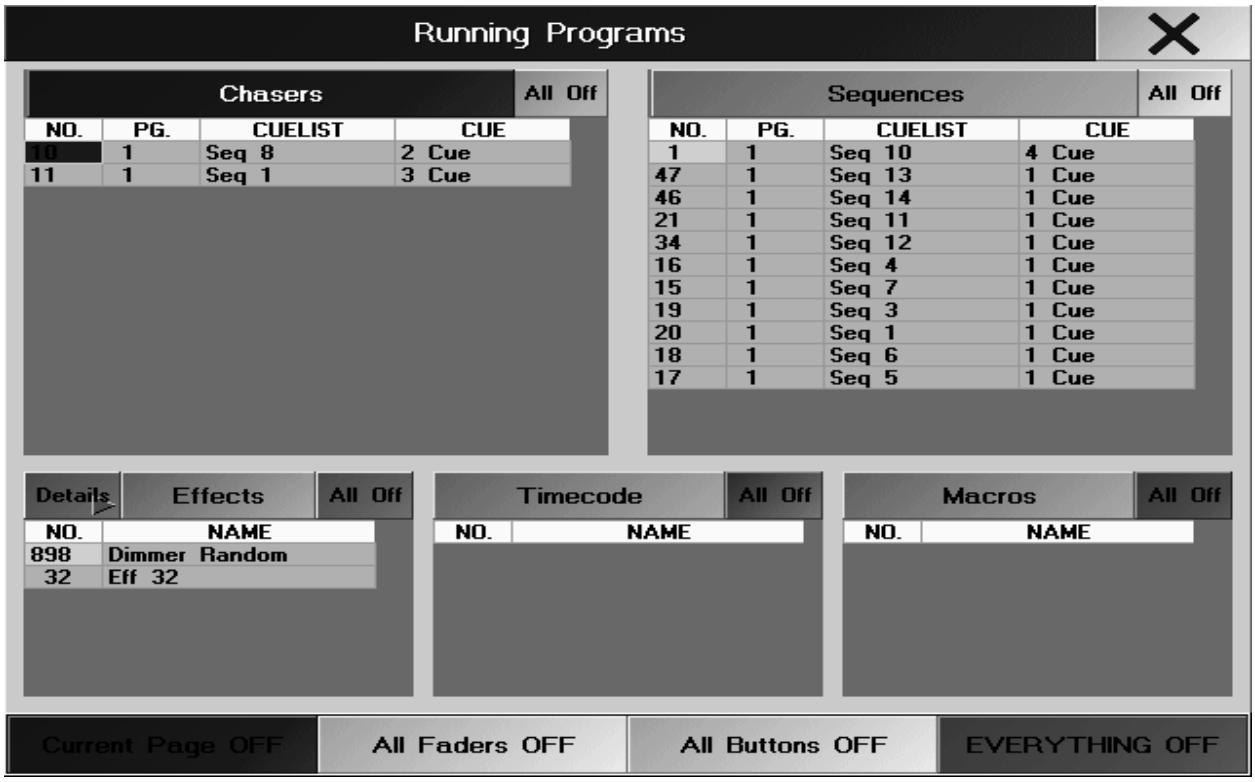
**If there are programmed Macros or Timecode Shows, in which the moved or deleted Pages were to be used, these assignments may no longer work!**

## 5.6 OFF menu (RUNNING PROGRAMS)

OFF



Pressing the OFF key twice will open the RUNNING PROGRAMS window.




All active chasers, sequences, effect groups, timecode shows and Macros are displayed here.

- CHASES ALL OFF: Switches off **all** (!) active CHASERS.
- SEQUENCES ALL OFF: Switches off **all** (!) active SEQUENCES.
- EFFECTS ALL OFF: Switches off **all** (!) active EFFECTS.
- TIMECODE ALL OFF: Switches off **all** (!) active TIMECODE SHOWS.
- MACROS ALL OFF: Switches off **all** (!) active MACROS.

Pressing the DETAILS key will open the View ALL RUNNING EFFECTS menu. ➡ ***6.6*** View ALL RUNNING EFFECTS menu

- CURRENT PAGE OFF: Switches off **all** (!) Executors of the current Page
- ALL FADERS OFF: Switches off **all** (!) active EXECUTOR Faders.
- ALL BUTTONS OFF: Switches off **all** (!) active EXECUTOR buttons.
- EVERYTHING OFF: Switches off **all** (!) EXECUTORS.
- CLOSE: Will close this window.

You can also switch off Executors or Pages directly.

**e.g.:** – [OFF key] [EXECUTOR button] [3] [TIME key] [2] [Enter]

– [OFFkey] [PAGE key] [3] [TIME key] [2] [Enter]

Fixtures or Groups can be released (knocked out) from direct access.

**e.g.:** – [OFF key] [FIXTURE key] [3] [Enter]

– [OFF key] [GROUP key] [3] [Enter]

# 6 Effects

## 6.1 Effect Pool

In the Effect Pool, you can create up to 900 different Effect groups. In the individual Effects groups, different Effects and functions can be combined and matched to each other.

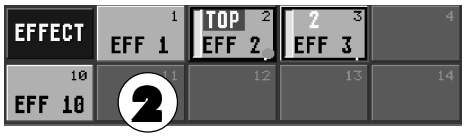
For PAN/TILT values, self-created two-dimensional forms can be played back and adjusted. ➠ **6.7** Creating and storing virtual forms

The individual Effect Groups can be subdivided into **four** different types:

- Effect Group **with** assigned Fixtures or Dimmers (key of the Effect Group is displayed in pink) - a specific effect
- Effect Group **without** assigned Fixtures or Dimmers (key of the Effect Group is displayed in red)- a generic effect
- Temporary Effect Group (keys displayed in blue in the ALL RUNNING EFFECTS menu). If this Effect Group is not stored after having been created, it will automatically be deleted after it is switched off.
- Sequence Effect Group (Effect Group key displayed in orange). A specific copy of a generic effect that has been created automatically because a generic effect has been used when creating a cue.

### 6.1.1 Creating an Effect Group

Create an EFFECT window. ➠ ***3.1*** Creating windows

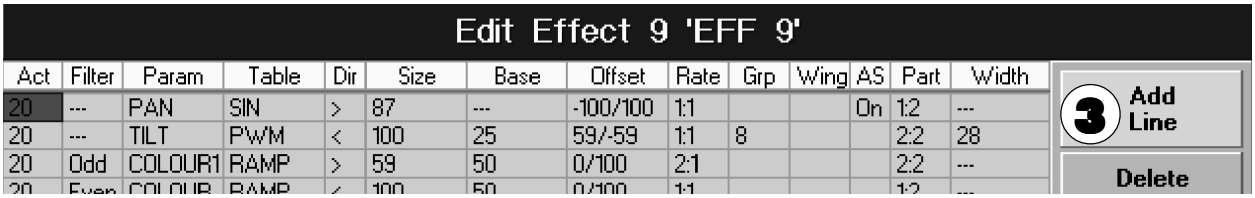



**1** Select the Fixtures or Dimmers, for which an effect is to be used (selected Fixtures/Dimmers are indicated by yellow characters).

**2** Choose an empty Effect Group. New keys and Encoder names are displayed above the encoders. Pressing the ***EDIT key*** for this Effect Group will open the EDIT EFFECT menu in the right TFT display.

**Or:**

Puss Edit key (LED on) and a key in the Effect Pool. The EDIT EFFECT menu will appear in the right TFT display.




| Act | Filter | Param | Table | Dir | Size | Base | Offset | Rate | Grp | Wing | AS | Part | Width |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | --- | PAN | SIN | > | 87 | --- | -100/100 | 1:1 | | | On | 1:2 | --- |
| 20 | --- | TILT | PWM | < | 100 | 25 | 59/-59 | 1:1 | 8 | | | 2:2 | 28 |
| 20 | Odd | COLOUR1 | RAMP | > | 59 | 50 | 0/100 | 2:1 | | | | 2:2 | --- |

**3** Pressing the ADD LINE key once will open the SELECT PARAMETER window. Now, select a function (e.g. PAN). After selecting a function, the SELECT TABLE window will open, where you can select an Effect for the chosen function.

| | |
|---|---|
| PWM: | Pulse width modulation |
| RANDOM: | Random fade-ins of individual channels of the selected function |
| CHASE: | sequential flash to 100% function |
| SIN: | Sinus function |
| COS: | Co-sinus function |
| LIN+: | Saw tooth ascending |
| LIN–: | Saw tooth descending |
| TRIANGLE: | Triangle function |
| PHASE1/PHASE2/PHASE3: | Normally used to create rainbow color effects on fixtures with color mixing. Each of the phases is exactly out of phase with the other. This allows for an even and offset application across 3 parameters. |

By pressing the USER DEFINED key (turns dark gray), user-created two-dimensional forms can be selected for the PAN/TILT function. If a form is to be created or modified, press the NEW or EDIT key to open the EDIT FORMS menu. ➠ **6.7** Creating and storing virtual forms

In order to assign further Effects to the selected Fixtures/Dimmers in this group, press the Add Line key again. A new line will be displayed and the Select Parameter window will open. Choose a function now and assign an Effect.

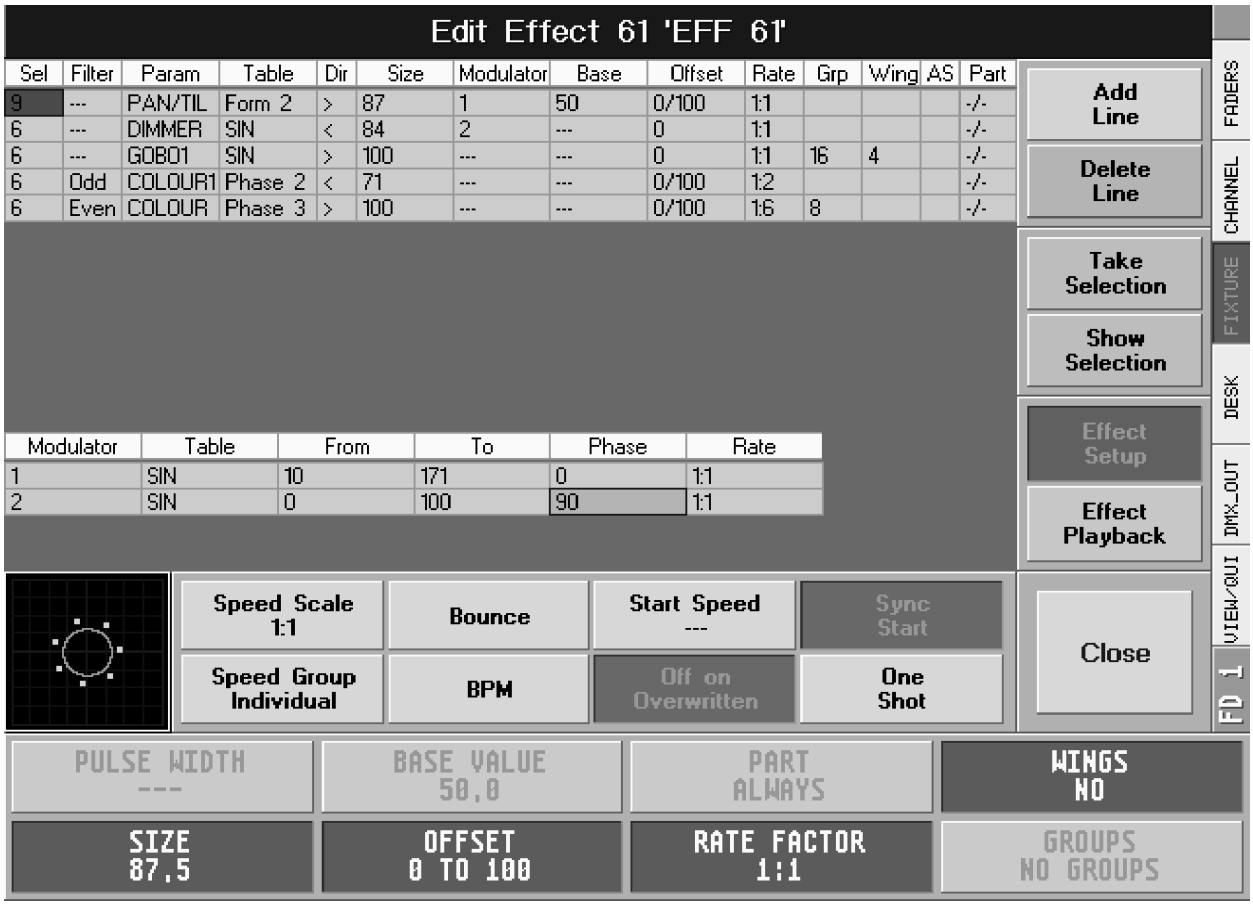
Up to 16 individual Effects can be combined within a Group.

## 6.2 Editing Effect Groups

When choosing an Effect Group from the Effect Pool, respective keys will be displayed above the Encoders. Pressing the **EDIT key** for this Effect Group will open the EDIT EFFECT menu.

**Or:**

Push Edit key (LED on) and a key in the Effect Pool. The EDIT EFFECT menu will appear in the right TFT display.




### 6.2.1 Editing Effects

In the title bar, the Effect Group to be modified will be displayed with its number and name. In the second line, the column functions are listed:

- Sel (Selection): Displays the numbers of Fixtures or Dimmers assigned to this Effect. If the Fixtures' or Dimmers' assignments are to be modified for an Effect, it has to be selected, this will be indicated by a red background.

Pressing the SHOW SELECTION key once will select the assigned Fixtures and Dimmers (displayed in yellow).

Select those Fixtures and/or Dimmers (will be displayed in yellow) that are to be assigned to this Effect. Now, press the TAKE SELECTION key once. The new number of Fixtures and Dimmers will now be inserted and adopted. If an generic Effect Group is to be created (thats one without any selection which can then be used with any selection), do **not** select any Fixtures or Dimmers, but press the TAKE SELECTION key once. The cell will now display a "Zero". The key of this Effect Group will be indicated in red in the Effect Pool.

- Filter: Here, a filter can be set that limits the execution of the Effect either to the odd-numbered or to the even-numbered Fixtures. To assign a filter, select the cell. Press the Encoder right of the display once. The SELECT FILTER window will open, where you can select a filter for this Effect.
- Param (Parameter): Display of the assigned parameter for which the Effect has an influence over. To change which parameter, select the cell and press the Encoder to the right of the display once. The SELECT PARAMETER window will open, where you can select a different parameter for this Effect.

- Table: Here, the assigned Effect is indicated with its name.

  To re-assign an Effect, select the cell. Press the Encoder right of the display once. The SELECT TABLE window will open, where you can select a different Effect for this function. The left part of the window displays the selected Effect. If the Effect Group has been started, the Fixtures and Dimmers will be displayed on the Form mimic at the bottom left of the display.

  PWM: Pulse width modulation. The pulse width can be defined as follows: Press the EFFECT SETUP key once (key has a dark background), press the PULSE WIDTH key once (key has a green background). Now, the pulse width can be modified using the Encoder below. The pulse width can be set to between 0 and 100%. Pressing the Encoder once shortly will automatically set the width to 25, 50, or 75%. You can also use the ALIGN function to set this value. ➠ **3.4.1** ALIGN function

  The values set for the respective Effects will be displayed in the WIDTH column. **Press and hold** the Encoder and turn to the right so that the focus (blue cell frame with red background) will be moved to the right. When moving the focus beyond the right border, further columns will be displayed (WIDTH, BASE).

  RANDOM: Random fade-ins of individual channels of the selected function. The number of channels to be faded in can be set.

  SIN: Sinus function

  COS: Co-sinus function

  LIN+: Saw tooth ascending

  LIN–: Saw tooth descending

  TRIANGLE: Triangle function

  PHASE1/PHASE2/PHASE3: Normally used to create rainbow color effects on fixtures with color mixing. Each of the phases is exactly out of phase with the other. This allows for an even and offset application across 3 parameters.

  By pressing the USER DEFINED key (turns dark gray), user-created two-dimensional forms can be selected for the PAN/TILT parameters. If a form is to be created or modified, press the NEW or EDIT key to open the EDIT FORMS menu. ➠ **6.7** Creating and storing virtual forms

  Pressing the SELECT key will adopt the function; the window will close discarding any modifications when pressing CANCEL.

- Dir (direction): In this column, an arrow indicates in which direction the Effect will be executed. To reverse the direction, select the cell and press the Encoder to the right of the display once.

- Size: In this column, each Effect is displayed with a separate value. The set value increases or decreases the size of the selected parameter. The maximum limit for size modifications that can be set is from –200 to +200%.

  Before modifying the value of a size, select the Effect first. Press the SIZE key once (green background). Now, you can set a different size using the Encoder below. Clicking the Encoder once will automatically set the size to 100. Clicking the Encoder a second time will increase the value to 200 and at the third time will reset it “0”. You can also use the ALIGN function to set this value. ➠ **3.4.1** ALIGN function

- Modulator: In this column, you can assign an individual Modulator to each individual Size effect. Using a Modulator, the effect size can automatically be altered. Think of it as and effect on the aplication of an effect to a parameter.

  To assign a Modulator for this effect, select this cell and press the Encoder on the right side of the Display. The SELECT MODULATOR window will open, where you can now go to NEW MODULTOR by turning the Encoder and clicking it to select this option. A new modulator will now be generated in the lower part of the sheet.

  - Modulator: In this column, the different modulators can be discerned by their numbers.
  - Table: The assigned effect for the modulator will be displayed by its name (Assignment ➠ item **Table**, previous page).
  - From: The starting point for the automatic modification in terms of percentage.
  - To: The end point for the automatic modification in terms of percentage.
  - Phase: Here, an angle for moving individual modulators can be set.
  - Rate: Display of the set ratio between the speed for this individual Modulator as to that of the whole Effect Group (Assignment ➠ item **Rate**, below).

- Base: You can also set an average value for each Effect using the BASE VALUE option. The set value will overwrite all previously modified values of this function and by this, will control all Fixtures/Dimmers evenly. The value can be set to between 0 and 100%.

  Before modifying the BASE VALUE, select the Effect first. Press the BASE VALUE key once (green background). Now, you can set an average value using the Encoder below. Clicking the Encoder once will automatically set the value to 50% (default value). Pressing the Encoder a second time, the value will be deleted and set to NONE (no BASE VALUE). If **no** BASE VALUE ist set, the Cue that is playing back or a direct access value will take effect. You can also use the ALIGN function to set this value. ➠ **3.4.1** ALIGN function

- Offset: By modifying the Offset, the starting points for the selected Fixtures and Dimmers will change. Default setting is between 0 and 100, i.e. the first Fixture/Dimmer starts with an offset of 0, the last with a maximum offset of 100%; all Fixtures/Dimmers in between will be distributed evenly. The maximum limit for Offset modifications that can be set is from -100 to +100.

  Before modifying the value of a size, select the Effect first. Press the OFFSET key once (green background). Now, you can set a different Offset using the Encoder below. Clicking the Encoder once will automatically set the value to 0. You can also use the ALIGN function to set this value. ➠ **3.4.1** ALIGN function

- Rate: Display of the set ratio between the speed for this individual Effect as to that of the whole Effect Group. Possible settings range between 1:16 and 4:1. At a ratio of 1:16, the rate set for the Effect Group will be divided by 16. If the setting is 4:1, the rate will be multiplied by four.

  Before modifying the ratio's value, select the Effect first. Press the RATE FACTOR key once (green background). Now, you can set a different ratio using the Encoder below. Clicking the Encoder once will automatically set the value to 1:1.

- Grp (Group): Display of the set number, by which the assigned Fixtures or Dimmers will be divided. In the subdivided groups, the Effect will then fully be executed.

  Before modifying the subdivision value, select the Effect first. Press the GROUPS key once (green background). Now, the subdivision of the Effect can be set using the Encoder below. Clicking the Encoder once will automatically delete the set value.

- Wing: The set number will indicate, how often the assigned Fixtures or Dimmers and the Effect will be mirrored. Possible settings range between –8 and +8.

Example: With a setting of 2, the assigned Fixtures/Dimmers will be divided in the middle. The set effect will now be executed in the first half forwards up to the middle, and in the second half, the Effect will be executed in reverse from the middle onto the last Fixture/ Dimmer.

With a setting of -2, the assigned Fixtures/Dimmers will be divided in the middle. The set effect will now be executed in the first half forwards up to the middle, and in the second half, the Effect will be executed in reverse and phase-shifted by 180° from the middle onto the last Fixture/Dimmer.

Before modifying the wing value, select the Effect first. Press the WINGS key once (green background). Now, the number of Effect wings can be set using the Encoder below. Clicking the Encoder once will delete the set value.

- AS (Adaptive Speed): If this function is activated, the speed will automatically be adjusted when the number of Fixtures or Dimmers changes. That means, the individual Effects of this Effect Group do **not** run at different speeds when working with different numbers of Fixtures or Dimmers, but always at the same step speed.

  To activate the function, select the cell. Press the Encoder right of the display once.

  **Or:**

  Activate by making a short right mouse click into the cell below AS. This will be indicated by a YES in this cell.

- Part (Partly): The sequence of an Effect can be subdivided 16 times, and an Effect can then be assigned to **the first individual** subdivision. This colomn displays what the subdivision ratio this part of the Effect Group belongs to.

  Example: With a setting of 1:5, the individual Effect would always be executed in the first fifth of a Effect Group sequence. Before modifying the subdivision value, select the Effect first. Press the PART key once (green background). Now, you can set the subdivision of the Effect Group for the individual Effect by **pressing and holding** the Encoder below. You **cannot** designate a section in which a particular Effect is to be executed, it will always be executed as the first subdivision

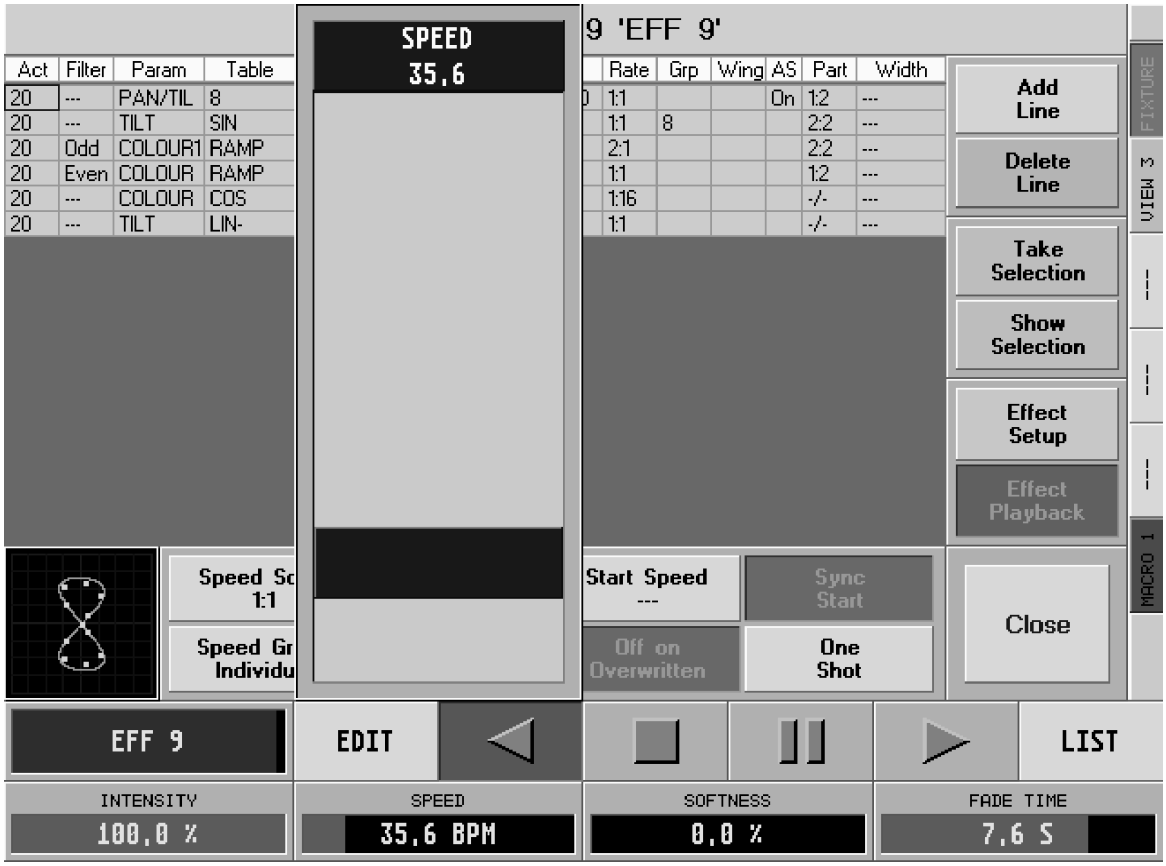
  Pressing the Encoder once shortly will set the value to ALWAYS and the Effect will be executed during the whole period.

### 6.2.2 Deleting individual Effects

Select the Effect to be deleted.

Press the DELETE LINE key.

## 6.3 Executing an Effect Group



If an Effect has started, this will be indicated for the appropriate Scanner and Dimmer channels by a violett bar in the Fixture, Channel or Fader Sheets. If you want to visualize the changes made to the values, the appropriate Sheet has be set to “Output“ (Options). ➠ **3.4.8 or 3.5.7** Options of Fixture, Channel and Fader Sheets

Select the Effect Group from the Effect Pool. The Effect Group will be started automatically.

**Or:**

The names and playback keys for the Effect Groups will be displayed in the right TFT display above the Encoders. The name of the currently selected Effect Group will appear above the left Encoder.

– Pressing the right arrow will start the complete Effect. The selected Fixtures or Dimmers will now form the Effect.

– Pressing the PAUSE key will stop or restart the complete Effect, respectively.

– You can switch off the Effect using the STOP key.

– By pressing the left arrow, the Effect will run backwards.

With the left INTENSITY Encoder, you can globally adjust the size of the whole Effect Group.

Pressing the Encoder while turning it will increase or decrease the Encoder’s resolution, depending on the setup. When pressing an Encoder or the key above, this will bring up a Fader above the Encoder in the display. Now, you can also use it to modify the value.

Use the SPEED encoder to set the speed for the whole Effect Group.

If you use the Encoder to increase the SOFTNESS value, the Effect will be faded in and out more softly. SOFTNESS can be used for PWM-, RANDOM- and CHASE Effects.

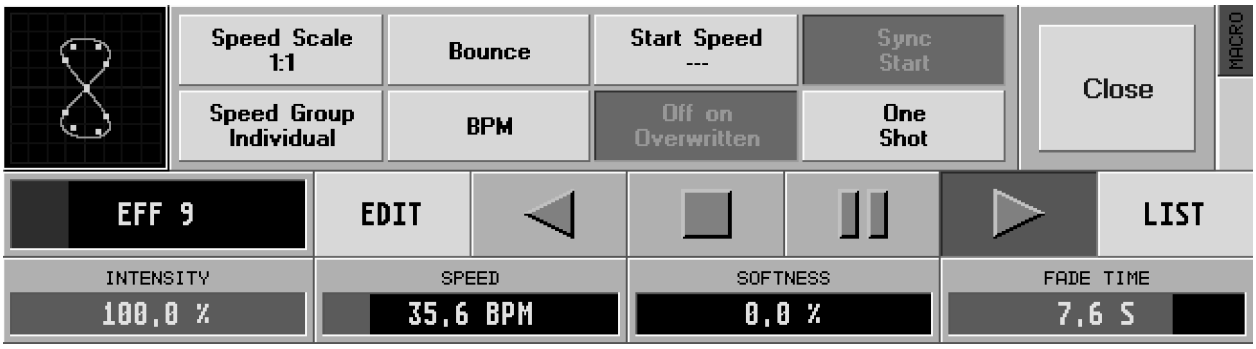
Using the right FADE TIME Encoder, you can now globally set a fade in and fade out time for this Effect Group. When switching the Effect Group on or off, this Fade Time will be faded in or out with the set duration.

Pressing the EDIT key will call up the Edit menu for this effect. ➠ **6.2** Editing Effects

Pressing the LIST key will open the VIEW ALL RUNNING EFFECTS window, where you have an overview on all currently active Effect Groups. ➠ **6.6** View ALL RUNNING EFFECTS menu

## 6.4 Customizing an Effect Group

The global settings like e.g. Bounce, BPM, Intensity, Speed etc., are automatically stored in the Effect Group.




You can customize the individual sequences of the Effect Groups by using the respective keys.

Speed Scale: The current ratio of the SPEED setting will be displayed on the key. Pressing this key will open the SPEED SCALE menu. Pressing a key will re-adjust the Speed setting. With MUL BY 2 or MUL BY 4, the SPEED setting will by multiplied by 2 or 4, with DIV BY 2, 4 or 8, the SPEED setting will be divided by 2, 4 or 8. Pressing the 1:1 key will recall the default setting again.

Speed Group: The key will display the currently assigned SPEED group. Pressing this key will open the SPEED GROUP menu. By pressing a key, you can designate a SPEED Group. Using the Fader of the assigned SPEED Group, you can now adjust the speed for this Effect Group. ➠ **5.1.6** Assigning Special Masters

If INDIVIDUAL is selected (default setting), you can adjust the speed only by using the SPEED encoder.

Bounce: If this key is pressed (dark background), the whole Effect Group will first run forwards and then backwards, etc.

BPM: If this key is pressed (dark background), the speed of the whole Effect Group will be controlled by the automatic measure recognition. ➠ **2.14** Setting Sound signals

Start Speed: Pressing this key once will store the currently set speed. The key will display the stored speed. From now on, this Effect Group will be started with this speed, even if the speed was changed during the execution. To delete the stored speed, use the Encoder to set the SPEED to STOP and press the START SPEED key once. Now, no speed is stored and the key will display NONE.

Off On Overwritten: This Effect Group will be switched off, when the OFF ON OVERWRITTEN key is pressed (dark background) and another Effect Group is started, in which the same Fixtures/Dimmers are to be used (default setting).

If this function is disabled, the Effect Group will **not** be switched off. It is still active, but does affect any Fixture/Dimmer. The key of this Effect Group in the Effect Pool will display a white/red flashing “2”. The number indicates, at what position this Group will be in relation to the other overwritten Effect Groups. If the **other** Effect Group that had overwritten this Group is switched off, this Effect Group will again affect the Fixtures/Dimmers. This function is active by default when creating a new Effect Group.

Sync Start: If this key is pressed (dark background), and another Effect Group had already been started, **this** Group will automatically be started at the same speed and position.

One Shot: If this key is pressed (dark background), the Effect Group will only be executed for one complete run and will be deactivated.

## 6.5 Effect Groups in Cues

Cues can trigger Effect Groups.

In the Cues, the playback settings (GO, GO-, Pause and OFF), Intensity, SPEED, SOFTNESS and IN/OUT FADE TIME are stored. Only effect playback parameters are stored in cues, effects settings are stored in the effect group and function very like presets. What is stored in the cue is not the effect group itself but a call to trigger the effect group with the current playback parameters.

**Or:**

When using generic effect groups (groups with a red background) as opposed to specific effects groups (groups with a pink background) and storing them in to cues, specific copies of the generic effect will be created (groups with an orange background). Allowing you to alter both playback parameters and effect settings without altering your original generic effect group.

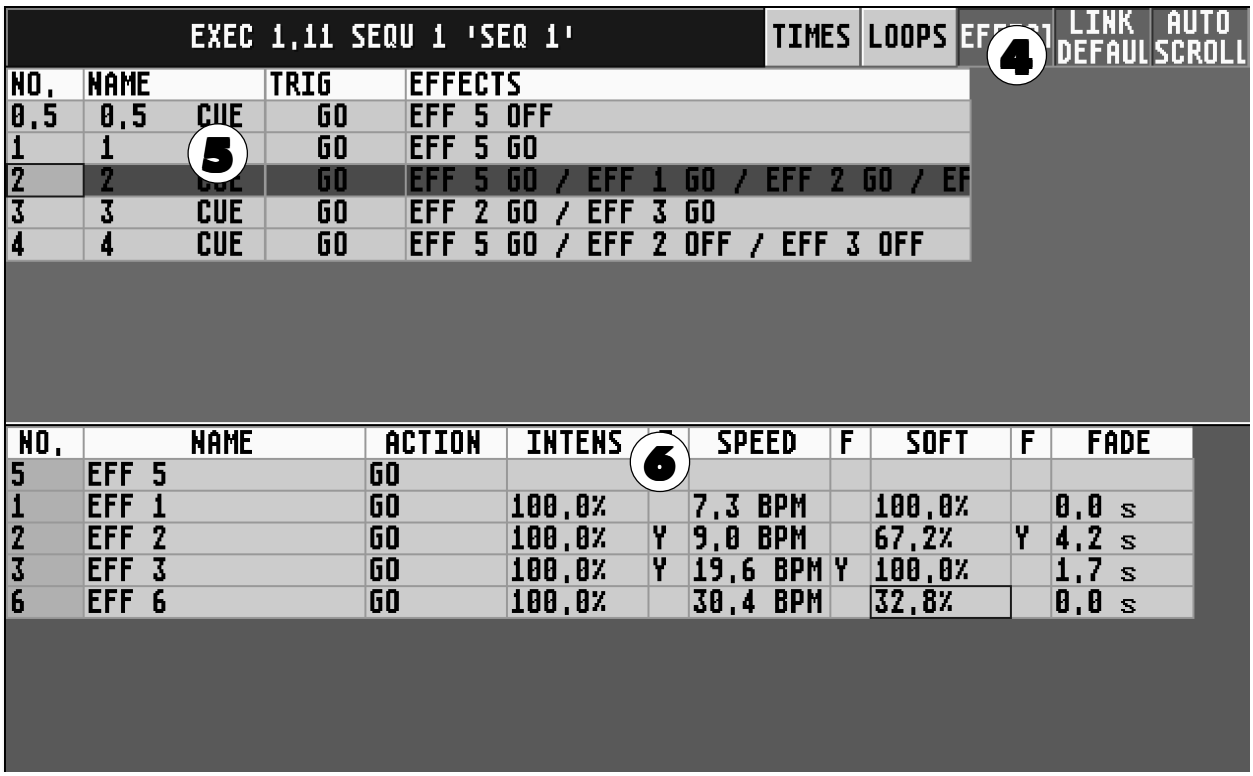
**1** Start an Effect Group in the Effect Pool by selecting it.

**2** Press the STORE key once.

**3** Press the EXECUTOR button to which the cue that will trigger the effect is to be stored. The Effect Group call will be stored in the Cue with all settings mentioned above. If this Cue is played back, the Effect Group will be started.

When calling up Effect Groups, its size, speed and softness can be faded in or out.

If in the Effect Group a FADE TIME is set, the intensity and speed or softness of the Effect Group will automatically be faded in or out when this Group is started.




**4** In the Executor Sheet or in the Edit Sequence window, press the EFFECT key (will be displayed dark gray). The window will be divided into two halves. The upper part will display the Cue, the lower part the calls to the individual Effect Groups for the selected Cue, including the play back parameters.

**5** Select a Cue in which calls or parameters of Effect Groups are to be modified (selected Cue will be displayed with a blue frame and a magenta background).

**6** The lower chart displays all calls of Effect Groups from this Cue.

Select an individual call to be modified (will be displayed with a blue frame). In the right display, the setting will be adopted and displayed above the Encoders and can be customized at will. If intensity, speed or softness are to be faded in or out with the set Fade Time when the Effect Group is called up, make one right mouse click into the cells behind the value in column ***F*** (Fade). The column will show a ***Y*** for YES. Press UPDATE to confirm the modifications and store them in the Cue.

You can modify the cell's Name, Intens, Speed, F, Soft and Fade directly by a right mouse click.

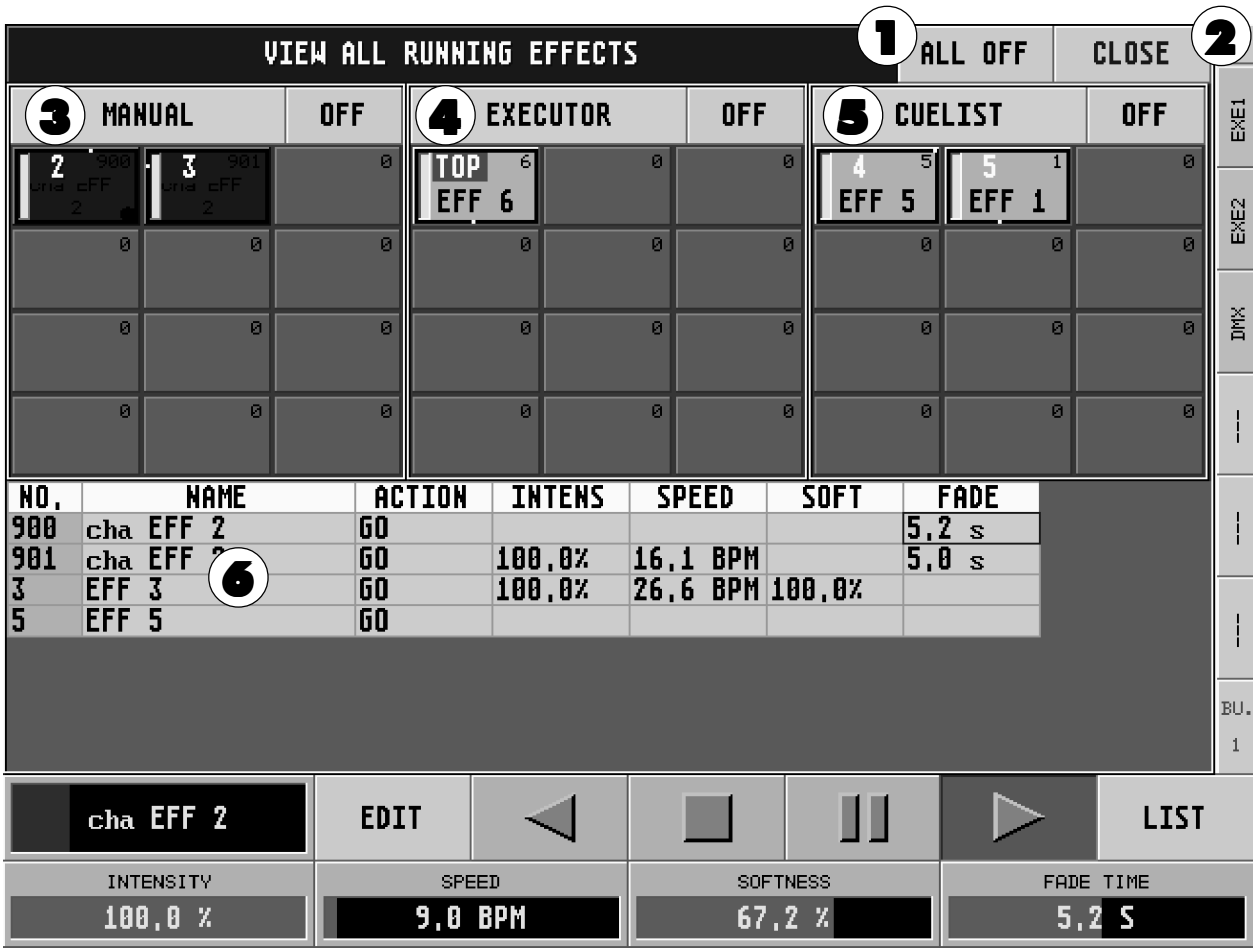
## 6.6 View ALL RUNNING EFFECTS menu

In this menu, all currently playing back Effect Groups will be displayed.

Press the EFFECT key twice. (On older consoles, this key is not labeled and is positioned between the VIEW and GOTO keys. An appropriate label can be ordered from MA or from your local dealer)

**Or:**

When choosing an Effect Group from the Effect Pool the respective key will be displayed above the Encoders. Press the LIST key on the touch screen.




**1** By pressing the ALL OFF key, you can switch off all Effect Groups simultaneously.

**2** You can leave the menu with the CLOSE key.

**3** In the left part of the menu, all manually called-up Effect Groups will be displayed. Pressing the OFF key on the right side of MANUAL, all these Effect Groups will be switched off.

**4** The middle part of the menu shows all Effect Groups that areplaying back via EXECUTOR faders. Pressing the OFF key right of the EXECUTOR will switch off these Effect Groups. ➠ **5.1.1** Assigning Effect Groups to EXECUTOR faders

**5** The left part of the menu shows all Effect Groups that are playing back via Cues. Pressing the OFF key on the right side of CUELIST, all these Effect Groups will be switched off.

**6** The lower part of the menu shows all Effect Group calls performed since the last Cue was stored, including their respective playback parameters. When storing the next Cue, all calls in this Sheet will also be stored.

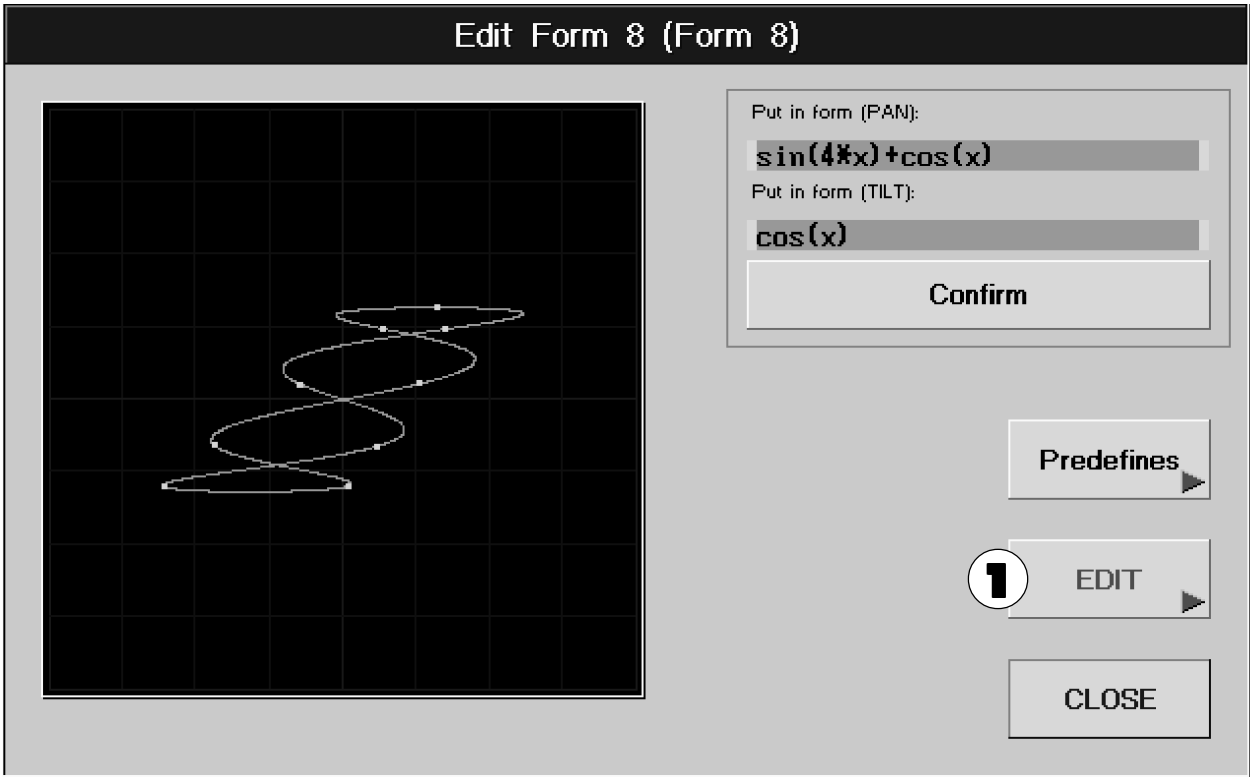
It is also possible to modify individual calls. To do so, select the respective call (will be displayed with a blue frame). The setting will be adopted, displayed above the Encoders and can be adjusted with them. You can delete a complete call by making a right mouse click into the NAME column. If you only want to delete a single parameter, make a right mouse click on the parameter.

# 6.7 Creating and Storing Virtual Forms (EDIT FORMS)

## 6.7.1 Creating Virtual Forms

From this menu, you can create two-dimensional forms for use with PAN/TILT parameters. When creating Forms, the movements can directly be output to the Fixtures. The created Forms will automatically be stored in the Form Pool.

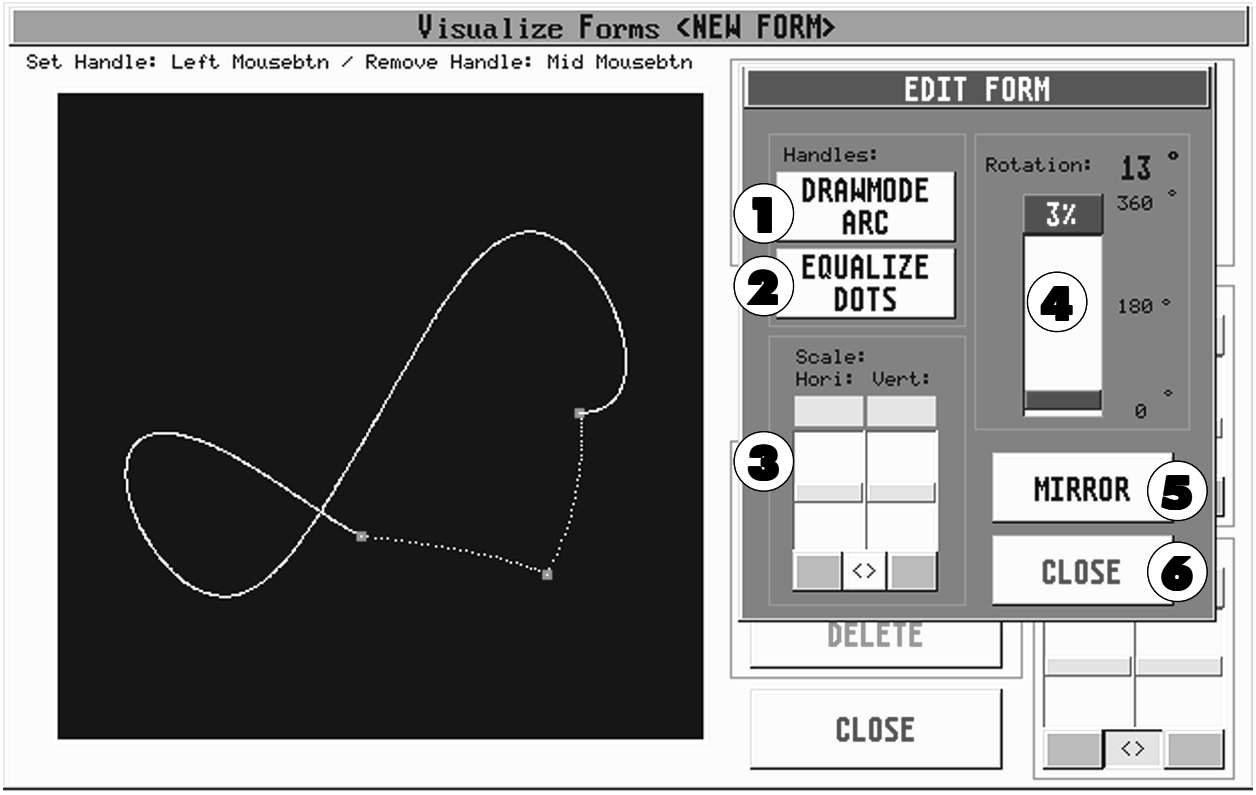
Calling up this menu: ➠ **6.1.1** Creating an Effect Group, **item 3**
➠ **6.2.1** Editing Effects, **item Table**




**1** Press the PREDEFINES key once. A window will open, where several prepared Forms will be displayed. Select one of these Forms; this Form will now be displayed on the the black window.

## 6.7.2 Modifying Forms

The EDIT FORMS window will open by pressing the EDIT key.




Make a left click with the mouse on at least three positions of the marked form. With each click on the form, a new red dot will be displayed on that position. In order to delete one of the dots, middle click with the mouse on this dot.

To reshape the form, click and drag with the mouse on one of the red dots. If you click the right mouse key during the reshaping (while holding the left mouse key), you can define the reshaping each time. ➡ item **1**

**1** By pressing the key, you can program in which way the lines shall be drawn when reshaping the form:
ANGLE: straight line
ARC: outer arc
ARROW: inner arc

By reshaping the form, the lines will be expanded and, respectively, the extended positions of the form will be reported to the Fixture faster.

**2** If the extended lines and, consequently, the longer ways for the Fixture are to be transmitted with the same speed, you have to press the EQUALIZE DOTS key once.

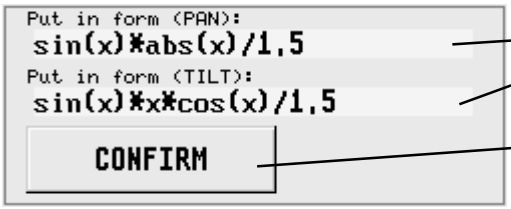
**3** The form can be modified in its horizontal or vertical size using the Hori: and Vert: sliders. By pressing the dark-grey key below the modified sliders shortly, both values can be set simultaneously. By pressing the "< >" key, both sliders can be coupled, so that the size can be modified simultaneously.

**4** Using the ROTATION slider, the form can be turned from 0° to 360°.

**5** By pressing the MIRROR key, the form can be mirrored.

**6** You can leave the EDIT menu with the CLOSE key.

With good knowledge in maths, you can also use formulas for PAN and TILT.




Make a left mouse click on the respective fields – now enter the formula via keyboard.

The form will be confirmed by pressing CONFIRM.

<u>Syntax to enter a formula manually:</u>

The standard display of mathematic formulas will be executed. The following is allowed:

- Mathematic Basic Operators: +, –, *, /
- Numerical constants: integers, floatingpoint numbers or exponential figures
  Example for valid numerical constants: 2.71818
  1.2e – 2
  0,4
- Other constants: pi corresponds to the circle figure $\pi$
- Variables: x
- Mathematical functions:
  - sin(x) or sinus(x)
  - cos(x) or cosinus(x)
  - abs(x) corresponds to the absolute amount
  - sqrt(x) corresponds to the square root
  - pow(x; y) corresponds to the y Power of x
  
  Arguments errors with x = 0 und y < = 0 or with x < 0 and y are no integers

Examples:

sin(3 * x)
sqrt(abs(x)) * sin(x)
sin(x) * cos(3 * x) * pi/2
(cos(x) * abs(x) + 1) / pow(x;2)
(cos(0.5 * x) * abs(x) + 0.5) / 2

# 7 Remote Control

## 7.1 Timecode

All sequences, chases and cues on the ***grandMA*** can be synchronized by using Linear Timecode (LTC) or MIDI Timecode (MTC).

Timecode synchronization can be used to trigger one or more controllers to synchronize with an audio or video recording. SMPTE 24-, 25- and 30 Drop and Non-Drop Frames are encoded time information, e.g. recorded on a separate track of a multitrack tape (frequency range of 1–2 kHz). Normally, this Timecode is already added when compiling the music, e.g. for presentations, but it can also be recorded afterwards in a regular recording studio. If the music is recorded in stereo, a third track is needed for the Timecode.

All sequences programmed into the ***grandMA*** can be synchronized by Timecode.

During the playback of the tape, the Timecode information is transmitted to the connected controllers. Each controller has an internal memory that triggers the activation of a specific program at a given point of time. On the ***grandMA***, the EXTERNAL LTC Timecode can be connected via a jack socket and the MTC via Midi IN on the rear of the unit.

### 7.1.1 Introduction to the Timecode System

**Here the major advantages of the new Timecode System:**

- Timecode shows are organised in a pool. The basic handling of timecode shows like edit, copy, delete, etc. is totally compliant with the rest of the console's syntax.
- Timecode shows are completely embedded into the command line. So you can now start timecode show number 5 from a macro.
- GOTO commands are supported and are used as the default when recording normal GOs. This means that the timecode show is referancing absolute cue numbers.
- Cue names and numbers are displayed in the timecode show.
- All kinds of executor fader movements are recordable. So you can now record the change of a chaser speed or a manual crossfade.
- Automatic fader data reduction, reducing the amount of recorded fader movements dramatically and allowing easier manual editing afterwards.
- Free choice of editing in graphic or text mode. Text mode supports filtering so that you can watch only the executors that you want to.
- Blind programming.
- No restrictions to the number of timecode shows running at one time; memory permiting of course.
- No restrictions for "no mouse please, users". The timecode show can be fully edited with the encoders and/or the touchscreens.
- Timecode shows can be "write-protected". So if you only want to watch your show running, you will not accidentally change something.
- Copy / Paste functions between different timecode shows is now possible. Timecode shows can be merged together.
- Autostart feature for timecode shows, e.g. the show will automatically load and run upon detection of the correct SMPTE signal.
- Repeat function with definable number of repeats for timecode shows with internal synchronisation.

### 7.1.2 Creating a Timecode Show

**Graphically with the touch screens or mouse:**

- Open a timecode pool window.
- Touch one of the timecode show keys, you will get the timecode control bar for this show in the display on the right.
- Enter the name for the timecode show using the PC keyboard.
- Press the EDIT field in the timecode control bar, and the timecode editor will appear.

**Using the command line:**

- EDIT TIMECODE X ENTER . Brings up the timecode editor and the timecode control bar for timecode show X. There is no hardware key for TIMECODE on the ***grandMA***, but you can enter this in the command line or into a macro by using the text keyboard.

**Combining the two methods:**

- EDIT and then touch a key in the timecode pool.

If the timecode show that you have selected was empty, there will be only the empty editor in front of you and you can now start recording or manual editing.

### 7.1.3 Playing back a Timecode Show

**Graphically with the touch screens or mouse:**

- Brings up a timecode control bar for the desired timecode show when touching a key in the timecode pool.
- Use the cells with the cd player-like symbols to control the show playback.

**Using the command line:**

- COMMAND TIMECODE X ENTER. COMMAND is one of the executor commands that you will find above the page keys. You can use GO+ , PAUSE, <<< , >>> , ON and OFF.

**Combining the two methods:**

- COMMAND (as described above) and then touch a key in the timecode pool.

**Description of playback commands:**

| Status | Command Line | Description |
|---|---|---|
| STOP | OFF | Show is stopped, no output is generated. |
| PAUSE | PAUSE | Show is stopped, output is generated for current time. |
| PLAY | GO+ | Show is running. |
| RECORD | STORE | Show is recording. |
| JUMP BACK | <<< | Show jumps to the next breakpoint before current time. |
| JUMP FORWARD | >>> | Show jumps to the next breakpoint after the current time. |

If a show is generating output, the corresponding key in the timecode pool will show the current time. In case of recording, this key is also blinking red with the note “REC”.

### External / Internal Sync

PLAY and RECORD on the sync setting in the options menu for their behaviour.

If sync is set to internal, time runs continuously, based on the internal time base.

If sync is set to “SMPTE“, the current time of the timecode show depends on the SMPTE input signal. If MIDI is set, MTC (Midi Timecode) will be used.

In the headline of the timecode pool you will find a SMPTE input indicator. Regardless of the shows using SMPTE, it will always display the current SMPTE input signal together with the SMPTE frame format.

If a show is using SMPTE (external synchronisation), the local time within the show can differ from the external SMPTE time. By using the timecode offset in the options menu, you can set up a time offset, which is subtracted from the external SMPTE time.

Shows which are using internal sync can have a user definable repeat. These settings are also found in the options menu.

## Pre Roll & After Roll, Dropout Elimination

Due to the fact that SMPTE is an analogue signal, fluctuations can occur. Very often there are temporary errors in the recorded SMPTE signal which are called dropouts.

As such misleading small errors should of course not affect the board, it filters out these errors automatically. Therefore the desk is filtering out these errors.

This filter is controlled by two values: **PRE ROLL** and **AFTER ROLL**.

**PRE ROLL** defines the time that a signal must be error free before it is accepted by the console.

A small pre roll means that your console reacts faster to incoming SMPTE signals.

**AFTER ROLL** defines the time that a signal must be continuously in error or missing before it is assumed to be off. During the after roll time, the console continues the show, using its internal time base.

A small after roll means that your console stops faster after the SMPTE signal has stopped, but that it is also reacting faster to errors in the SMPTE signal.

The settings for pre roll and after roll can be found in the **context menu of the timecode pool**. This can be accessed by right clicking on the headline of the Timecode pool.

The names for pre roll and after roll have a historical significance. At the beginning of the timecode era , the huge tapes in the machines which contained timecode and audio signals where really visibly rolling .

## Manually Changing the Current Time

If the show is playing back or recording with external sync, it is not possible to change the time manually.

There are many different ways to change the current time of your show when using the internal time base:

**Graphically with the mouse:**

- left mouse click somewhere into the timeline

**With the encoder:**

- Turn the time encoder (leftmost) to change the current time. Each click on the encoder means one frame.
- If you press and turn this encoder simultaneously, each click means one second.
- If you press the encoder without turning, you can enter an absolute time.

**With the “jump to breakpoint” commands:**

- You will find them as the outer playback symbols in the timecode control bar and as command line functions <<< and >>>.
- Time will jump to the next available breakpoint in the given direction.

**With the event encoder (second) in the bar:**

- Whenever you select a new event , time will jump to the exact time of that event.

## 7.1.4 Recording a Timecode Show

Recording is enabled only if the timecode show is not write-protected (options menu).

Recording will always be „live on stage“ and can be done in three ways:

**a) Fully automatic recording with external synchronisation.** The current time is given by the SMPTE signal and every executor command or fader movement will be added to the timecode show until you stop or pause the show. Your actions and pre-recorded items already in the show will be live on stage. You can repeat the recording process step by step to add more and more details to your show.

**b) Fully automatic recording with internal synchronisation.** Basically the same as with external sync, time is running continuously, but you where to start and where to stop.

**c) Semi-automatic manual recording.** In this mode time is not running, although your show is in recording mode. Between each executor command that you want to be recorded, you can set the recording time manually with an encoder or by direct absolute input (simply press the first encoder). This is probably the best way of editing for the experienced user, who already has a time table in front of him. Even fader commands can be recorded this way.

**Starting to record:**

- **Automatic recording** is started by pressing the record symbol in the timecode control bar (the red symbol). The depending on the sync-setting (in the options menu) you will record with internal or external synchronisation. Automatic Recording can also be started from the command line in a similar way to recording a macro: STORE TIMECODE X ENTER or STORE and press a key in the timecode pool.
- **Manual recording** is started by pressing the MANUAL RECORD key in the timecode editor.

**Stop recording:**

- Recording is stopped when you PAUSE or STOP the timecode show.
- Automatic recording with internal sync will also be interrupted if you enter a new time.
- Recording is NOT stopped when you close the timecode editor. So be aware of what is being recorded, otherwise you will discover a huge timecode show at some later point.

**After recording**, particularly if you have recorded fader movements, it is a good idea to use the **DO FADER DATA REDUCTION** (in the options menu). This keeps your show slim and easier to edit. The fader data reduction process guarantees, that the compressed signal will not differ more than 1 frame in time and 1% in value from the original. Usually recorded fader events will be reduced to 20% or less of the original amount.

### The Length of the Show

During recording, the length of the show is automatically extended if needed. This also happens if you manually add events after the current length (see manual editing).

The length of a show becomes very important if you plan to use internal sync and repeat. In combination with the “when reaching the end” setting (to be found in options menu), it is worth taking into consideration how long your show should be.

The length of the timecode show can be changed in the options menu.

## 7.1.5 Manual Editing of a Timecode Show

Editing is only enabled, if the timecode show is NOT write-protected (options menu).

### Track Management

A timecode show consists of ***TRACKS***:

A TRACK has a specific function. At the moment, only **EXECUTOR TRACKS** are implemented, but in the future, it is conceivable to have tracks implimented for submasters, global speeds etc., too. This way, one track would always relate to one specific executor. It is not possible to have two tracks for the same executor.

A TRACK consists of **SUBTRACKS**:

A SUBTRACK has a specific function that relates to its “parent track”. For example, a subtrack for an executor track could have the crossfade function. One subtrack always relates to one specific function. It is not possible to have two subtracks for the same function.

Every executor track has at least one subtrack for executor commands. Subtracks for fader movements are added if needed.

A SUBTRACK contains **EVENTS**:

An EVENT contains specific TIME and DATA information. The DATA is interpreted according to the function of the assigned subtrack.

## Adding Tracks

When recording TRACKS are automatically added, but of course you can also add tracks manually:

- Press the TRACK FUNCTIONS key or make a right click with the mouse in the track display of the timecode show editor (on the left side, below the sort key).
- Select ADD NEW TRACK.
- Choose an executor from the list, or simply press a physical executor button. You can even enter EXEC 17 ENTER in the command line. An executor track for this executor will be added to your timecode show if it did not exist already.

## Changing the Executor

Changing the executor of an already existing track is very similar to adding a new track:

- Choose the track that you want to change (with the track encoder or by touching it)
- Press the TRACK FUNCTIONS key.
- Select CHANGE EXECUTOR from the list. The rest is similar to adding a new track.

## Adding Subtracks

When recording SUBTRACKS are added automatically. Of course you can also add subtracks manually. Subtracks can only be added to already existing tracks:

- Choose a track (with the track encoder in the bar or by touching it).
- Press the TRACK FUNCTIONS key or right click with the mouse on the TRACK.
- Select ADD NEW SUBTRACK.
- Choose the type of the new subtrack from the list.

## Deleting Tracks or Subtracks

- Choose a track (with the track encoder in the bar or by touching it).
- Press the TRACK FUNCTIONS key or right click with the mouse the TRACK.
- Select DELETE TRACK.
- If the track contains events, you will be asked for a confirmation, otherwise the track will be deleted immediately.
- If you delete the first subtrack (like executor command track), the whole track with all its subtracks will be deleted.

## Expanding / Collapsing Tracks

Tracks can be **EXPANDED** or **COLLAPSED**. An expanded track will show all of its subtracks, while a collapsed track will hide all its subtracks except for the first one. For an executor track, the first subtrack is always the executor command subtrack.

This functionality only affects the display. “Hidden“ subtracks are always played back.

An expanded track is marked with a “+” in front of it, a collapsed track indicated by a “-“.

Click on this mark to change the expand/collapse status of the track.

The TRACK FUNCTIONS menu contains functions to expand/collapse all tracks simultaneously.

## Selecting Tracks

Tracks can be SELECTED individually. A selected track is displayed in a darker colour.

**Only selected tracks are shown in TEXT display mode**. For some functions it is important whether a track is selected or not. For normal operations however, in graphic display mode, you do not have to worry about this.

Click on the track name cell (you may have to do this twice, because the first click is chooses the current track) or press the track encoder within the bar to change the selection status of a track.

The TRACK FUNCTIONS menu contains functions to select/deselect all tracks simultaneously. These functions are also available as direct “R” (Reset all tracks to unselected) and “S” (Set all tracks to selected) keys.

At the moment, selecting tracks does not affect the playback functionality, it is only a display and edit function. For future versions, however, we plan to have that as a special playback mode, to enable playback output for selected tracks.

## Sorting Tracks

Perhaps you have a large number of tracks in your show, but currently you are only interested in some of them. Select these tracks and press the SORT key. The selected tracks will be sorted and displayed at the very top of the track display.

If you have selected all (or no) tracks and press SORT, they are sorted into their natural order, e.g. the order in which they appear on the console.

The sorting of tracks is part of the show and is stored with the show. It is only a display function and not affect playback functionality.

## Adding Events

### Graphically with the mouse:

- Choose the ADD mouse tool. The cursor will show an arrow with a large "+".
- Click anywhere in a track. At the position you clicked with the mouse a new event will appear.
- To edit this new event right click on it.

### With encoders and keys:

- Set the current time with the time encoder (first one) to where you want to add the event.
- Use the track encoder (second one) to select the track on which you want to add the event.
- Press the ADD HERE! key.
- At the given position, a new event will appear and now you are ready to edit the event.

When you are adding events on an executor command track, the timecode editor will try and predict the most likely command at that particular point in the track.

For example if you have an executor with a sequence, containing 3 steps, and you simply add one event after the other, it is assuming:

GOTO STEP1 , GOTO STEP2 , GOTO STEP3 , OFF

Or if you are adding a new event after a FLASH UP ON command, it will predict the new event as FLASH UP OFF.

For chaser, the editor never predicts GOTOs, instead it uses conventional Gos. The editor is also assumes, that you only want to switch the chase on, and then off again, regardless of how many steps the chase has.

### Attention, mouse users:

Please be aware that if you have chosen the ADD mouse tool, this tool stays active. So wherever you click with the mouse – something will be added. If you switch on "always reset mouse tool" in the options menu, the risk of accidentally adding something is reduced.

## Selecting Events

Events can be SELECTED individually. A selected event is displayed in red. All selected events together are called the selection. You can MOVE, DELETE or COPY this selection.

### Selecting with the mouse in graphic mode:

- Choose the SELECT mouse tool. The cursor will show a selection frame.
- Left mouse click somewhere in a track, keep mouse key pressed, and drag a frame.
- Upon release of the mouse key, all events inside the frame are selected.

### Selection with the mouse in text mode:

- Left mouse click somewhere in the list, keep mouse key pressed, and drag vertically a frame.
- Upon release of the mouse key, all text lines (events) inside the frame are selected.

### With the CREATE SELECTION function:

- Press the CREATE SELECTION key, the CREATE SELECTION menu appears.
- Choose to either make a selection on the current (green) track only, or on all selected tracks.
- Choose one of the three commands:
- A) BEFORE TIME Events that are before the current time will be selected.
- B) ALL All events on given tracks will be selected
- C) AFTER TIME Events that are after the current time will be selected.

## Selecting the Current Event

Only one event can be defined as the current event. In the graphic mode, this event will blink. In text mode, this text line (event) will be yellow. Its position is shown in the timecode control bar.

You can select the current event one way or the other:

**Graphically with the mouse:**

- Choose the SELECT mouse tool.
- Make a selection that contains only one event, or click only on one event.

**With the encoders in the bar:**

- Select the track with the track encoder (second one).
- Select the event with the event encoder (third one).

**With the XY-encoder in text mode:**

- Simply scroll through the list.

## Deleting Events

**Graphically with the mouse:**

- Select the DELETE mouse tool. The cursor will show an arrow with a large "-".
- Drag a frame or click on an event. Events that you click on or that are inside the frame will be deleted.

**With the DELETE SELECTION key:**

- Make a selection or select the current event.
- Then press ***DELETE SELECTION***. If more than one event is going to be deleted, you will be asked to confirm that.

**Attention, mouse users:**

Please be aware that if you have chosen the DELETE mouse tool, this tool stays active. So wherever you click with the mouse – it will be deleted. If you switch on "always reset mouse tool" in the options menu, the risk of accidentally deleting something is reduced.

## Moving Events

**Graphically with the mouse:**

- Choose the MOVE mouse tool. The cursor will show a hand with a little arrow. The corner of the arrow is the "hot spot" of the cursor.
- Left click INSIDE the selection or on an event and keep mouse key pressed.
- Drag the mouse horizontally. The selection/current event will follow.

**With encoder within the bar:**

- Make a selection or select the current event.
- Turn the MOVE encoder (furthest to the right). For every click of the encoder, you will move the selection/current event by one frame.
- If you press and turn the encoder for every click you will move one second.
- If you press it without turning, you can enter a new start time for your selection/current event. This input can be a relative movement if you use signs ( "-1.5" will move your selection 1.5 seconds backwards in time).

**In text mode:**

- Edit the Time column (by right clicking with the mouse or press the XY-encoder).
- The movement will be relative if you use the signs, otherwise it will be absolute.

### Editing an Event

You can only edit an already existing event (see Adding Events).

Editing an event means to change its data. If you want to change its time, look for MOVING EVENTS.

**Graphically with the mouse:**

- Right click on an event and the Edit menu appears according to the type of the event.

**With the event encoder in the bar:**

- Select current event with the track and event encoder.
- Then press the event encoder. Edit menus will appear.

**In text mode:**

- Scroll to the event that you are looking for.
- Edit the appropriate column by right clicking or pressing on the XY encoder. The parameter column is only editable for GOTO commands and for fader events.

**Special fast edit for fader-events in graphic mode:**

- This method is not exact enough for speeds, but for master fader events it is recommended.
- Click with the middle mouse key on an event and keep the mouse key pressed.
- Drag the mouse vertically with middle mouse key pressed. The value of the fader event will now follow.

## 7.1.6 Special Procedures

### Recording Crossfades

Crossfades for executors are recorded as a combination of commands and fader movements.

These commands are:

**XGoUp** Crossfade will start upwards

**XGoDn** Crossfade will start downwards

**Xend** Crossfade has ended

XGoUp and XGoDn have a **cue number as parameter**, just like a GOTO command, therefore a crossfade may start on any cue, not only on the next one.

Try to record a crossfade and have a look at the outcome. You will see, that the **global crossfade setting** CROSSFADE PERMANENT / RELOAD affects the recording.

In the first case, a pattern of XGoUp, XgoDn, XGoUp... Xend is recorded, while in the second case only XGoUps are recorded.

Nevertheless you can change the global crossfade mode afterwards without affecting the playback of your recorded timecode show.

If you edit a crossfade manually, be aware that the crossfade **fader movement alone does not do anything**. Although faders are moving, no crossfade is started. You have to place the crossfade commands on the command track to make the crossfade work.

Accordingly, if you want to move a crossfade in time, you have to **move both**, the fader events on the fader track and the crossfade commands on the command track.

At first glance, this procedure of recording a crossfade may seem to be complicated, but it has a lot of advantages:

- The crossfade commands are displayed in text mode, making crossfades more readable
- Crossfades relate to absolute cue numbers, like gotos.
- Crossfades are not destroyed by running fader data reduction
- You can jump into the middle of a crossfade, or run backwards into a crossfade, and it will be correctly initialised. (This will happen quite often when using external time code!)

## 7.2 Remote Control via Touchboard

On the rear of the ***grandMA***, there is a 25-pin SUB-D socket (DC REMOTE CONTROL) to connect a standard Touchboard with up to 16 channels.

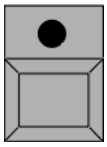
| | |
|---|---|
| PIN 1 ... 16: | Input Channels 1 to 16 |
| PIN 21+22: | +5 Volt (max. 100 mA Output) |
| PIN 17+18 und 24+25: | Earthing |

The Touchboard input sockets only function as switches:

| | |
|---|---|
| 0 bis +2 Volt: | Off |
| +5 to +15 Volt: | On |

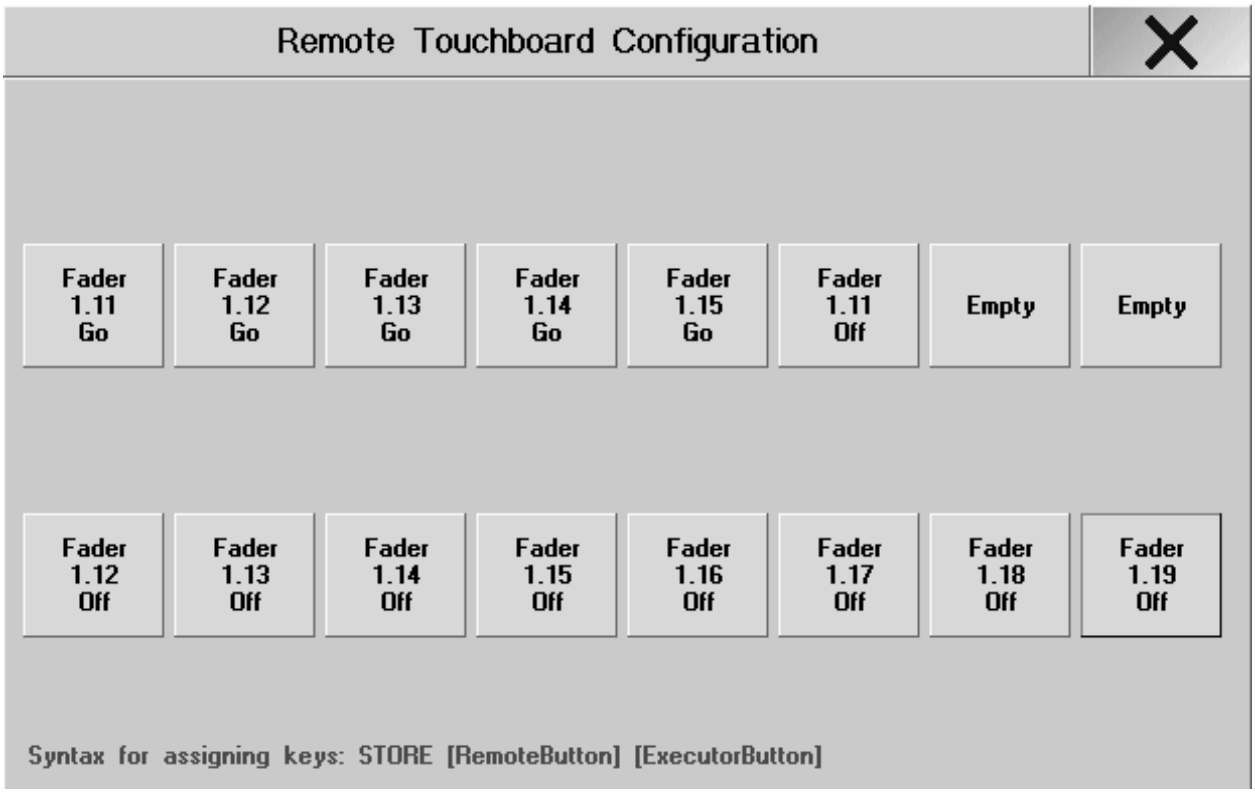
### 7.2.1 Assigning Playback keys

**TOOLS**

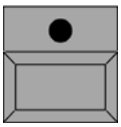


Press the TOOLS key once.

Call up the TOUCHBOARD REMOTE CONFIGURATION menu using the REMOTE key.




**STORE**



Press the STORE key once (LED is on).

Press a key on the Touchboard, where a Playback key is to be assigned to, once.

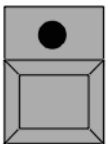
**Or:**

Select a key in the REMOTE CONFIGURATION menu. Press the Playback button that you want to assign. The selected button will now be assigned.

The assigned Playback keys will be displayed on individual keys. Only EXECUTOR buttons can be assigned to the Touchboard.

### 7.2.2 Deleting Assignments

**DELETE**



To delete an assigned Playback key, press the DELETE key once (LED is on).

Press the Touchboard key or the appropriate key once.

In the TOOLS menu, you can switch the Touchboard function on or off using the ON / OFF key.

If the Touchboard is activated, you can use all assigned keys with the Touchboard. For optical convenience, the Key in the TOUCHBOARD REMOTE CONFIGURATION menu will have a red background when pressing a Touchboard key.

The assigned playback keys will always be executed directly.

The assigned playback keys will be executed in combination with the previously selected commands.

Example: If an OFF key is programmed on a TOUCHBOARD key, but PAUSE is activated (➠ **1.7** Layout and Controls, item 11), not the OFF command, but the PAUSE command will be executed when pressing this key.

# 7.3 Remote Control by DMX IN

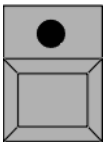
DMX IN can be used to MERGE the signals of a second control board with those of the ***grandMA*** and transmit them to the stage via the same data line. If, during this process, channels from the ***grandMA*** and from the second control board are mixed up, only the higher value will be transmitted. DMX IN will only be linked to DMX OUT A and will not be output via Ethernet.

For DMX-Merge information ➡ **2.9.1**

Via the DMX IN socket, assigned commands can be called up from an external DMX console. The DMX input has only the function of a switch that will release at approx. 10%.

## 7.3.1 Assigning Playback Keys

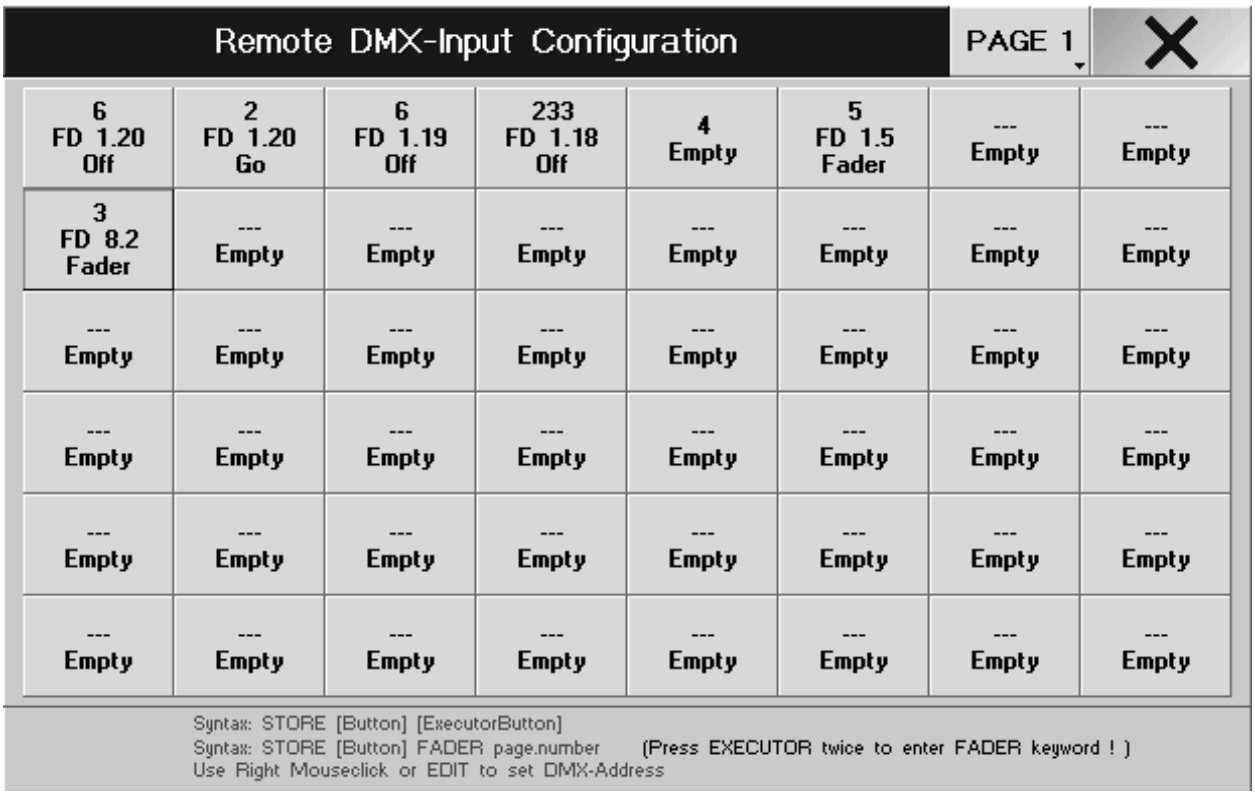
TOOLS



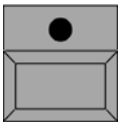
Press the TOOLS key once.

Call up the DMX-IN REMOTE CONFIGURATION menu using the REMOTE key.

Press the STORE key once (LED is on).




STORE



Select a key in the DMX-IN REMOTE CONFIGURATION menu.

Press the Playback button that you want to assign. The selected button will now be assigned.

**or:**

Enter the Executor Fader to be assigned using the Command Line (e.g.: „Executor Executor 1.5“ means Exe-Fader 5 on Page 1) and confirm with Enter.

The assigned Playback buttons/Fader will be displayed on the individual keys. Only EXECUTOR buttons and faders can be assigned to the respective DMX channel.

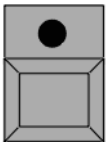
## 7.3.2 Assigning DMX Channels

Make a right mouse click on the key. A menu will open in which you can assign one of the 512 DMX channels to this key. Identical DMX channels can be assigned to more than one key.

By pressing the PAGE 1 key, you can open another page (PAGE 2) with keys.

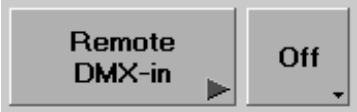
## 7.3.3 Deleting Assignments

DELETE



To delete an assigned Playback key, press the DELETE key once (LED is on). Press the respective DMX IN key once.

## 7.3.4 Using the DMX Input




In the TOOLS menu, you can switch the DMX input function on or off using the ON / OFF key.

If the DMX input is activated, you can use the assigned keys by switching on the respective DMX input. For clarity when looking at this window, the keys in the DMX-IN REMOTE CONFIGURATION menu will have a red background when switching on the respective DMX channel.

The assigned playback keys will always be executed directly.

The assigned playback keys will be executed in combination with the previously selected commands.

Example: If an OFF key is programmed on a DMX-IN channel, but PAUSE is activated (➠ **1.7** Layout and Controls, item 11), not the OFF command, but the PAUSE command will be executed when calling up this DMX-IN channel.

# 7.4 Remote Control by MIDI

On the rear of the ***grandMA***, you will find the MIDI IN, MIDI THRU and MIDI OUT sockets. Assigned commands can be called up using e.g. an external MIDI keyboard or sequencer. Devices like these can be plugged into the Midi IN socket. Only note commands are currently supported. The incoming signals will be automatically transferred to MÍDI THRU. Also Midi Show Control (MSC) can be processed or sent.

## 7.4.1 Midi Show Control

The console can receive MSC commands which will be used to trigger the Master sequence only.

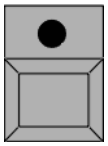
Push the key “Midi Show Control“ within the Tools menu; the menu Configuraton Midi Show Control will be opened.

To receive MSC, set the device or the groups into the window „Midi IN“. You can switch between Midi Enabled and Midi via Ethernet via the key below the window „Midi IN“. After pushing the key „Store“ all settings will be stored and the function will be started

To send MSC, set the device or the group into the window „Midi OUT“. By the key „Send“ you can change between sending Device, Group or ALL.. You can switch between Midi Enabled and Midi via Ethernet via the key below the window „Midi OUT“. After pushing the key „Store“ all settings will be stored and the function will be started.

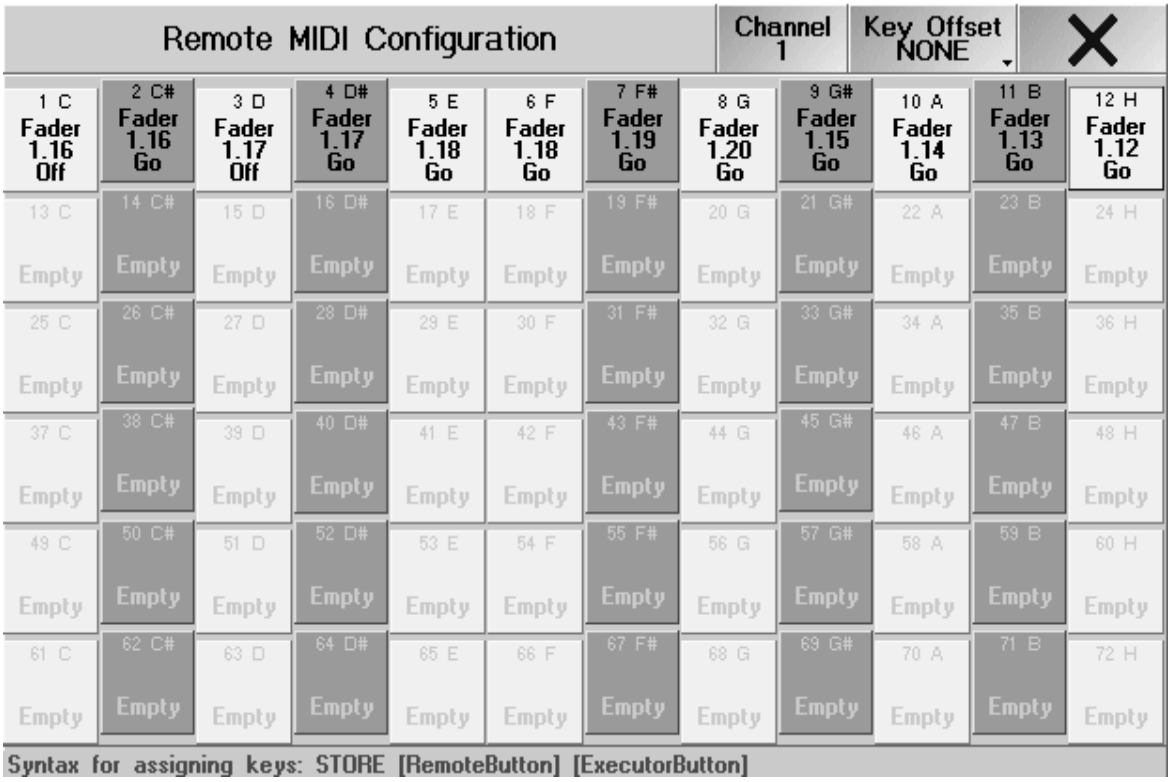
## 7.4.2 Assigning Playback Buttons

TOOLS

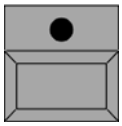


Press the TOOLS key once.

Call up the MIDI REMOTE CONFIGURATION menu using the REMOTE key.




STORE



Press the STORE key once (LED is on).

Select a key in the MIDI REMOTE CONFIGURATION menu.

Press the Playback button that you want to assign. The selected button will now be assigned.

The assigned Playback buttons will be displayed on the individual keys of the MIDI REMOTE CONFIGURATION menu. Only EXECUTOR buttons can be assigned to the respective MIDI note.

### 7.4.3 Selecting the MIDI Channel

Pressing the Channel key will open a menu in which you can select one of the 16 Midi channels by a mouse click.

### 7.4.4 Assigning the Pitch

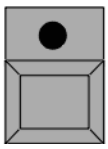
By pressing the KEY OFFSET key, you can transpose the incoming notes by one octave downwards. This can be set for up to three octaves.

### 7.4.5 Deleting Assignments

To delete an assigned Playback button, press the DELETE key once (LED is on). Press the Key once.

### 7.4.6 Using the MIDI Input

DELETE



In the TOOLS menu, you can switch the MIDI input function on or off using the ON / OFF Key.

If the MIDI input is active, you can call up the assigned keys by pressing the respective note keys on the MIDI keyboard. For optical convenience, the key in the MIDI REMOTE CONFIGURATION menu will have a red background when pressing a note key.

The assigned playback keys will always be executed directly.

The assigned playback keys will be executed in combination with the previously selected commands.

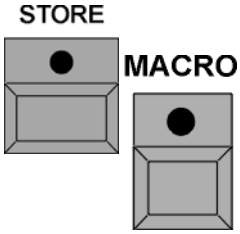
Example: If an OFF key is programmed on a MIDI-IN channel, but PAUSE is activated (➠ **1.7** Layout and Controls, item 11), not the OFF command, but the PAUSE command will be executed when calling up this MIDI-IN channel.

# 8 Macros und QUIKEYS

## 8.1 Creating Macros

With macros, you can combine sets of command line entries and key strokes for recalling in batchs. These can also be:

- Playback buttons (e.g. GO, Fader, Pause, etc., incl. number of the Executor)
- Call-ups of Views
- Call-ups of Delete operations
- Other Macro calls
- Call-ups of Clear operations




Press the STORE key once (LED is on).

Press the MACRO key once (LED is on). The SELECT MACRO window will open.

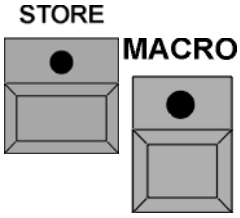
Enter a name for the Macro using the keyboard.

Press the TIMED key (will turn dark-gray) if the Macro is to be executed over the same amount of time as it takes to record it. The alternaitive is that the Macro will be played back as fast as possible.

Confirm with ENTER.

LED in the MACRO key flashes.

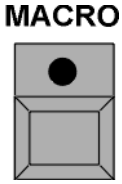
Now, enter all operational steps to be executed by this Macro.




To stop recording the macro press STORE, MACRO and then ENTER (LED in the MACRO key is now off).

This completes the MACRO Programming procedure.

### 8.1.1 Activating Macros




Press the MACRO key once (LED is on). Enter the number of a Macro via keypad and confirm with ENTER.The macro will now be executed.

**Or:**

Press Edit (LED on) and one of the VIEW soft keys.

Select MACRO from the assign a MACRO or a VIEW dialog box

The SELECT window will open – select which MACRO you would like to assign.

Now the Macro has been assigned to the VIEW key and can be activated at any time.

### 8.1.2 Macro Pool

In the Macro Pool you can call up Macros directly by touching directly on the display.

Make a right mouse click on an „empty“ position on one of the three TFT displays or on an external monitor. The CREATE A WINDOW menu will open. ➠ **3.1** Creating Windows.

Select MACRO pool and the MACRO window will open .

By press an MACRO soft key you can be activated at any time.

### 8.1.3 Editing Macros

Press the EDIT key once. Select a Macro from the MACRO Pool.

**Or:**

Press the EDIT key once. Press the MACRO key once, enter the Macro number and confirm with ENTER. The EDIT MACRO window will open.

- In the LINE column, the individual commands are numbered.
- In the COMMAND column, all stored commands are displayed one by one.
- For each command the time between steps where the macro was recorded is displayed in the DELAY column. This times can be edited or ignored for playback purposes.

Pressing the ADD LINE key will insert a step in front of the chosen position. Now, you can enter a command using the text keyboard. If you want to use a Delay time when performing a command, click in the cell, enter a time using the keyboard, and confirm with ENTER.

To delete a command, select one of the lines and press the DELETE LINE(S) key.

To modify a command, select one and press the EDIT LINE key. Now, you can enter a new command.

If you want to modify the Delay time, click into the cell, enter a different time using the keyboard, and confirm with ENTER.

Pressing the EDIT MACRO NAME will open the EDIT NAME window. Now, you can enter a new name using the keyboard and confirm this with ENTER.

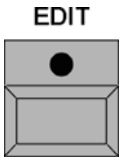
If the TIMED (MARCRO) key is switched on, the calls of this Macro will be executed with the set DELAY times. Pressing this key once will switch the display to MACRO NOT TIMED. In the Sheet, the DELAY times will be displayed on a dark background, and the Macro will be executed without delay times.

You can leave the menu with the CLOSE key.

## 8.2 Assigning and Activating QUIKEYS

You can display and call up various keys, commands and functions using the QUIKEY pool (Display Softkeys).

Create a QUIKEY window ➠ **3.1** Creating a Window




Press the EDIT key and click or touch on a key in the QUIKEY pool .

**or:**

Make a right click with the mouse on a key. The QUIKEY OPTIONS pool will open.

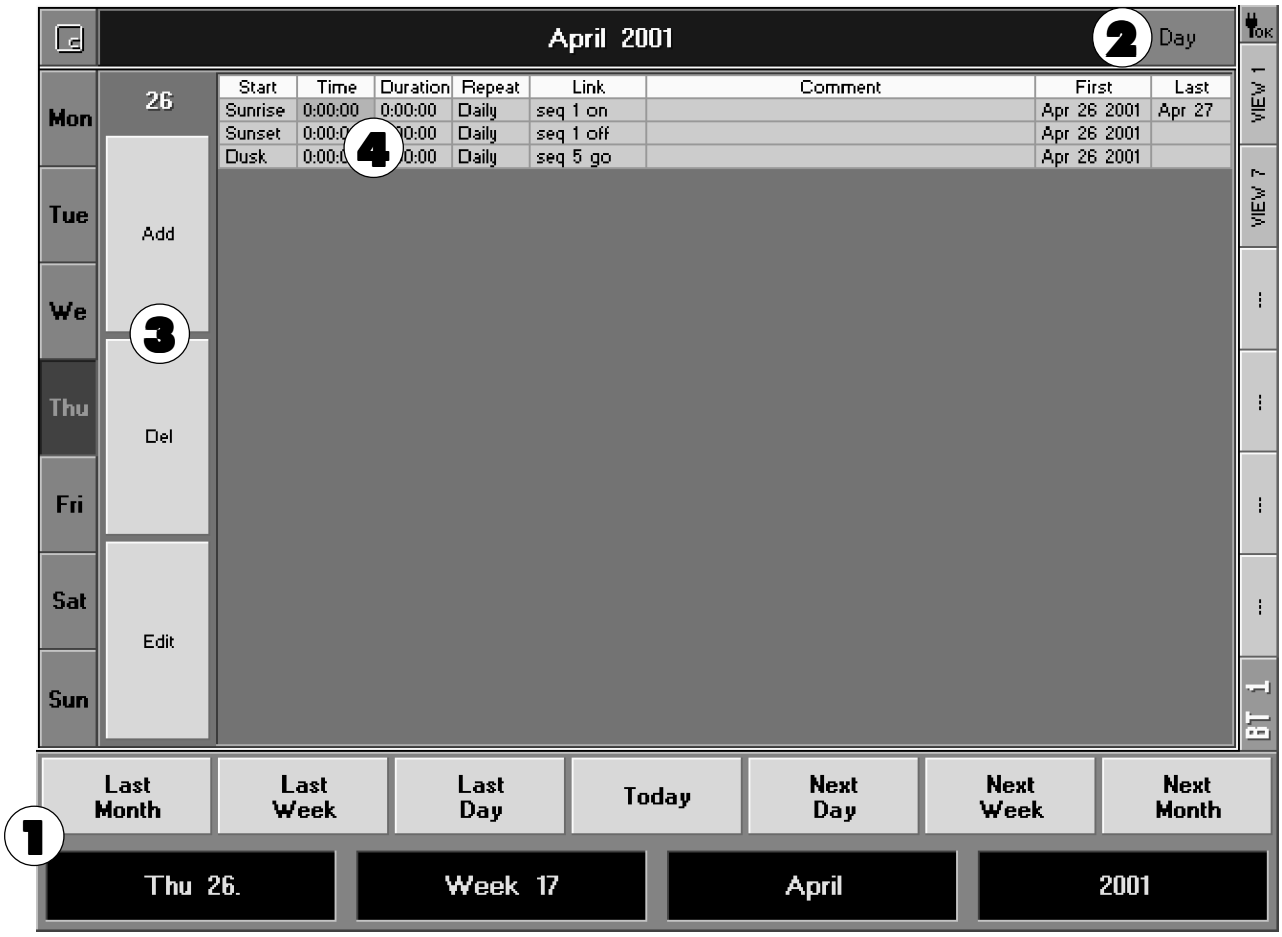
Clicking on one of the functions will assign it to the key. Using this method it is possible to customise the console allowing quick and easy access to commonly used functions.

**List of functions:**

| | |
|---|---|
| ALIGN OFF: | Switches off the ALIGN function. |
| ALIGN LEFT: | ALIGN key pressed once |
| ALIGN RIGHT: | ALIGN key pressed twice |
| ALIGN BOTH: | ALIGN key pressed three times |
| ALIGN SYM: | ALIGN key pressed four times |
| CLEAR SELECTION: | CLEAR key pressed once |
| CLEAR ACTIVE: | CLEAR key pressed twice |
| CLEAR RELEASE: | CLEAR key pressed three times |
| VALUES MODE: | Switches the FIXTURE and CHANNEL SHEET to the VALUES mode |
| FADE MODE: | Switches the FIXTURE and CHANNEL SHEET to the FADE time mode |
| DELAY MODE: | Switches the FIXTURE and CHANNEL SHEET to the DELAY time mode |
| ASSIGN: | ASSIGN key |
| EMPTY: | Creates an empty key |
| FLIP: | ● Moving Head Fixtures (this function is used to control the manner in which a Moving head fixture moves between two positions):<br>– Pressing 1x: The head will be turned so that it is pointing to the same position but with different values for Pan & Tilt. All lights that have 360 degrees or more of Pan and 270 degrees of tilt can point at the same position using two (or more) sets of Pan & Tilt values.<br>– Pressing 2x: For fixtures with more than 360 degrees of Pan, a third set of Pan and Tilt values is possible while still pointing to the same position on stage. If the fixture only has 360 degrees of movment it will return to its original position.<br>– Pressing 3x: The head will be returned to the original position.<br>When using head Fixtures, the FIXTURE SHEET will show a yellow square left of the PAN value, symbolizing the current head position.<br>● Mirror Fitxures:<br>The PAN/TILT value will be inverted, the mirror will be positioned so to easily allow the creatation of symetrical looks. |
| **–** (minus): | Minus key |
| STORE: | STORE key |
| EDIT: | EDIT key |
| UPDATE: | UPDATE key |
| ESCAPE: | ESCAPE key |
| ENTER: | ENTER key |
| ALL SELECTION: | Reselects **all** FIXTURES and CHANNELS (this is normally used after working with the NEXT/ PREV). |
| ODD SELECTION: | Selects all ***odd*** FIXTURES and CHANNELS |
| EVEN SELECTION: | Selects all ***even*** FIXTURES and CHANNELS |
| INVERT SELECTION: | Allows to invert the selection.<br>- If several fixtures are activated (values in red), but only some of those fixtures are currently selected (fixture name in yellow), you can deselect those fixtures and reselect all other fixtures will active values by pushing the INVERT SELECTION key and ENTER. |
| DELETE: | Delete key |
| MOVE: | MOVE key |
| COPY: | COPY key |
| BACKUP: | BACKUP key |
| SETUP: | SETUP key |
| TOOLS: | TOOLS key |
| PREVIOUS: | PREV. key |
| NEXT: | NEXT key |
| TRACKBALL SPEED: | Toggles the TRACKBALL between coarse and fine. |
| ENCODER SPEED: | Toggles the ENCODER between coarse and fine; further toggling is achieved by pressing on the ENCODER. |

## 8.3 Agenda Menu

In this window you can set the time of day and date for the automatic execution of Macros. It is also possible to set relative trigger points using sunrise, sunset, dawn and dusk as a reference.




**1** You can select a different Edit Date by using the encoders or the keys on the display.

**2** Pressing this key, you can toggle between day, week, month or year in this display.

**3** If DAY is chosen, the ADD, DEL and EDIT keys will be displayed.
Pressing the ADD key will include a new column in the sheet, where you can set the programming for automatic control.
If a column is selected, you can delete it by pressing the DEL key.
If a cell is selected, you can change the function / time by pressing the EDIT key.

**4** All created events will be displayed in this sheet.

Selecting a cell within a column and pressing the encoder will open a window where you can enter the following:

Start:
- Absolute: The Macro will be started at the set time.
- Dawn: The Macro will be triggered at the calculated time for dawn.
- Sunrise: The Macro will be triggered at the calculated time for sunrise.
- Sunset: The Macro will be triggered at the calculated time for sunset.
- Dusk: The Macro will be triggered at the calculated time for dusk.

➠ **2.15** Menu TIME & DATE item 2

Time: If ABSOLUTE is selected in this line under „Start“, a time can be set for the Macro to start.
If DAWN, SUNRISE, SUNSET or DUSK is selected in the start column, you can enter between -1 to +1 hour. Consequently, the Macro will be started either 1 hour earlier or later than the calculated time.

Duration: If the unit is powered up later than the trigger time a setting in this column specifies the amount of time (up to 8 hours), after the original trigger time, that the macro should still be triggered.

Repeat: NONE will execute the event only once.
DAILY, WEEKLY, MONTHLY or YEARLY will execute the event repeataly according to the set frequency.

Link: Here you can specify which Macro is to be triggered by the event.

You can enter a comment, using the keyboard.

First: If an event is displayed with black background in the sheet, this Event will be repeated on the current day. This cell shows the date, on which the Event was first executed.

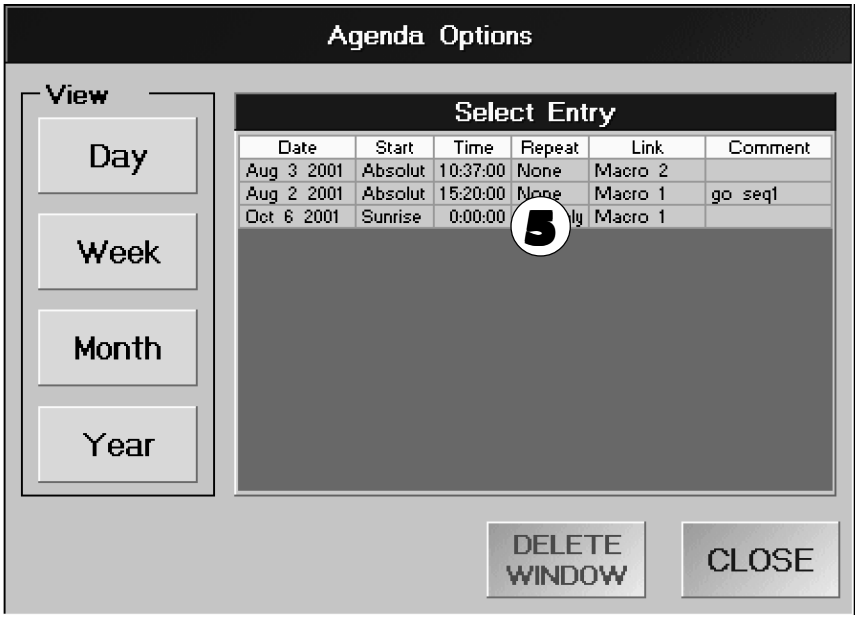
Last: Here, you can enter that last date that the Event will be executed. If an event is displayed with black background in the sheet, this event will be repeated on the current day. This cell shows the date, on which the event was last executed

## Agenda Options

Touch the touch screen on the left corner of the title bar.

**Or:**

With a right click using the mouse on the title bar, you can open the Agenda Options window.




**5** The table will show all created events. By clicking with the mouse or the encoder you can select and edit specific events

# 9 Command line

## 9.1 Introduction

The following chapter describes the functionality of the ***grandMA*** family of consoles that can be achieved using the command line.
"Command line operation" means using physical keys or the keyboard as opposed to using the mouse or touchscreen(s).

### 9.1.1 Quikeys

On some ***grandMA*** consoles, particularly the ***grandMA*** replay unit, you may not find all of the described hard keys. In spite of this small disadvantage, you can create a QUIKEY pool window on the screen and arrange the missing functions there. Then simply use these "soft keys" instead of the hard keys.

### 9.1.2 Double functions of hard keys

Some keys have more than one function due to space considerations. Some hard keys have an alternative function at the second or even the third push. These keys are

| Hard key | First press | Second press | Third press |
|---|---|---|---|
| ***ASSIGN*** | ASSIGN | LABEL | |
| ***CHANNEL*** | CHANNEL | DMX | |
| ***EXEC*** | EXEC | FADER | |
| ***GOTO*** | GOTO | LOAD | |
| ***IF*** | IF | IFOUTPUT | |
| ***MOVE*** | MOVE | INSERT | |
| ***PRESET*** | PRESET | FEATURE | |
| ***TIME*** | FADE | DELAY | VALUE |
| ***VIEW*** | VIEW | VIEWKEY | |
| ***EFFECT*** | EFFECT | Call up an effect view | |
| ***GROUP*** | GROUP | Call up a submaster view | |
| ***PAGE*** | PAGE | Call up a total page view | |

### 9.1.3 Messages

Sometimes the command line asks you a question upon the execution of a command. It can also inform you about something that went wrong with your command.
If such a message or a question window appears on the display, use the NEXT and PREVIOUS hard keys to select the appropriate answer (the key with the thick blue border) and then hit ENTER. Also ESC can be used for simple messages or warnings. If there is a more complex question and you hit ESC, the action is considered to be CANCELED.
Every command line action that succeeds will appear in the history of all command line windows.

### 9.1.4 Command line window

Of course you want to be able to see the commands that you give to your console. Open a command line window on the screen. There you can see what you enter and what you have entered previously.

### 9.1.5 Using the PC keyboard

Some users may find it convenient to use the PC keyboard for command line input. Open a command line window on the screen. Whenever this window has the input focus (title is shown in deep blue), all keystrokes of the PC keyboard go into the command line. If the input focus goes somewhere else, the PC keyboard will no longer work with the command line. Touching the title or the bottom line of the command line window will give the input focus back to it.
To permanently lock the the PC keyboard to command line input, press the SCROLL LOCK key. You will hear a beep and the SCROLL LOCK lamp will be on, indicating that the PC keyboard is now locked to command line operation.
If the PC keyboard is locked, you can not use it for other operations like naming presets etc. But another push of the SCROLL LOCK key will unlock it.

If you are using the PC keyboard as command line input, you can only enter valid commands and values. If you try to enter FIQQQ the command line will audiably warn you upon the entry of the First Q. This is because the only two commands that the command line recognises that start FI are FIXTURE or FIX.
In most cases it is not necessary to enter the full name of a keyword, the letter F is totally sufficient for FIXTURE. You can find all keywords and their shortest form in section 9.2 command overview.

### 9.1.6 Using the command line history

It is possible to recall previous commands from the history into the current command line.
There they can be re-executed or edited and executed.

a) - Left click with the mouse in the history of a command line window
- Or scroll with the XY encoder if the command line window has the focus
- Or use the UP and DOWN cursor keys on the PC keyboard if the command line window has the focus (or the PC keyboard is locked to the command line).

b) Edit the command line if you want
c) Press ENTER. The command line will be executed.

## 9.2 Command Overview

Here comes the complete list of all possible keywords in the command line.

| **Keyword:** As it appears in the command line. | **Shortcut:** Shortest possible form of the keyword when using PC keyboard. | **Hard key:** How to enter the keyword into the command line. | **Operation:** Short description of the meaning. For a more detailed explanation see chapter 3. |
|---|---|---|---|
| + | + | + | Plus |
| - | - | - | Minus |
| <<< | < | <<< | Go Back with no time |
| >>> | > | >>> | Go Forward with no time |
| ALL | ALL | QUIKEY | All selection (with ODD/EVEN) |
| ALL_CHASES | ALL_C | CONSOLE | Accessing all executors with chases |
| ALL_SEQUENCES | ALL_S | CONSOLE | Accessing all executors with sequences |
| ASSIGN | AS | ASSIGN | Assign <source> <destination> |
| AT | A | AT | At , give value |
| CHANNEL | C | CHANNEL | Channel |
| CLEAR | CL | CLEAR | Progressively clear programmer |
| CLEAR_ACTIVE | CLEAR_A | QUIKEY | Deactivate programmer |
| CLEAR_ALL | CLEAR_ALL | QUIKEY | Total clear of programmer |
| CLEAR_SELECTION | CLEAR_S | QUIKEY | Clear selection |
| COPY | CO | COPY | Copy <source> at <destination> |
| CUE | CU | CUE | Cue |
| DEF_GO | DEF | Yellow GO | Go forward for default executor |
| DEF_GO- | DEF_GO- | Yellow GO- | Go back for default executor |
| DEF_PAUSE | DEF_P | Yellow Pause | Pause for default executor |
| DELAY | DELA | 2 x TIME | Enter delay mode or give delay time |
| DELETE | D | DELETE | Delete <destination> |
| DMX | DMX | DMX | DMX address |
| DMX_BTN | DM | CONSOLE | Remote DMX button |
| EDIT | ED | EDIT | Edit <destination> |
| EFFECT | EF | EFFECT | Effect |
| ESC | ES | ESCAPE | Escape , close dialogs |
| EVEN | EV | QUIKEY | Even selection (with ALL/ODD) |
| EXEC | E | EXECUTOR | Executor |
| FADE | FADE | 1 x TIME | Enter fade mode or give fade time |
| FADER | FADER | 2 x EXEC | Fader, access executor faders |
| FADERBUTTON1 | FADERBUTTON1 | Hit Executor | Middle button of executor section |
| FADERBUTTON2 | FADERBUTTON2 | Hit Executor | Lower button of executor section |
| FADERBUTTON3 | FADERBUTTON3 | Hit Executor | Upper button of executor section |
| FEATURE | FE | 2 x PRESET | Single feature like PAN |
| FIX | FIX | FIX | Fixing executors |
| FIXTURE | F | FIXTURE | Fixture |
| FLASH_DOWN | FLASH_D | CONSOLE | Downflash executor |
| FLASH_DOWN_OFF | FLASH_DOWN_O | CONSOLE | End of Downflash |

| | | | |
|---|---|---|---|
| FLASH_UP | FLASH_U | CONSOLE | Upflash executor |
| FLASH_UP_OFF | FLASH_UP_O | CONSOLE | End of Upflash |
| FORM | FO | CONSOLE | Form, used by effects |
| FULL | FU | FULL | Full, equals 100% |
| GO | GO | GO | Go forward |
| GO- | GO- | GO- | Go backwards |
| GOTO | GOT | GOTO | Goto <cue> |
| GROUP | G | GROUP | Group |
| IF | IF | IF | If (logical AND for selections) |
| IFOUTPUT | IFO | 2 x IF | If Output, create selection from output |
| INSERT | I | 2 x MOVE | Insert <source> at <destination> |
| INVERT | INV | QUIKEY | Invert <destination> , inverting selection |
| LABEL | LA | 2 x ASSIGN | Label <destination> “Name” give a name |
| LEARN | L | LEARN | Learn, change speed of running programs |
| LOAD | LO | 2 x GOTO | Load <Cue> |
| MACRO | M | MACRO | Macro |
| MIDI_BTN | MI | CONSOLE | Remote Midi Button |
| MOVE | MO | MOVE | Move <source> at <destination> |
| NEXT | N | NEXT | Next device of current selection |
| ODD | OD | QUIKEY | ODD selection (with ALL/EVEN) |
| OFF | OF | OFF | Off, switch something off |
| ON | ON | ON | On, switch something on |
| OOPS | O | OOPS | Oops, I made a mistake -> Undo |
| PAGE | PA | PAGE | Page |
| PAUSE | PAU | PAUSE | Pause something |
| PRESET | PR | PRESET | Preset type or Preset |
| PREVIEW | PREV | PREVIEW | Preview something |
| PREVIOUS | P | PREVIOUS | Previous device of current selection |
| SELECT | SE | SELECT | Select <executor> , select default executor |
| SEQU | S | SEQU | Sequence (Cuelist) |
| STORE | ST | STORE | Store |
| SWOP | SW | CONSOLE | Swop executor |
| SWOP_OFF | SWOP_O | CONSOLE | End of swop |
| TEMP | TE | TEMP | Temporary run executor |
| THRU | T | THRU | Through, to enter ranges |
| TIMECODE | TI | CONSOLE | Timecode show |
| TOGGLE | TOG | CONSOLE | Toggle running status of executor |
| TOP | TOP | TOP | Call first cue of executor |
| TOUCH_BTN | TO | CONSOLE | Remote Analog input button |
| UNPRESS | UN | CONSOLE | Release of command |
| UPDATE | U | UPDATE | Update |
| VALUE | VA | 3 x TIME | return to value mode |
| VIEW | V | VIEW | View, contents of one or multiple screens |
| VIEWBTN | VIEWB | 2 x VIEW | Viewbutton, hardkey beside screens |

# 9.3 Command Reference

In this chapter, all commands are explained along with their syntax, demonstrating all possibilities of using comand line entry.

## 9.3.1 Key word classifications

In the following descriptions, the term ***starting keyword*** will appear often.

This “starting keyword” is a keyword that you start a new command line operation with.

### Basic operational keywords

A basic operational keyword in the command line determins a basic operation.

These keywords can only appear as starting keyword in the command line.

**The only exception from this rule is the AT command. AT can follow a list of object keywords and will still be interpreted as operational keyword.**

Operational keywords expect object keywords as targets for their operation. Sometimes they also use helping keywords.

| Keyword | Operation |
|---|---|
| ASSIGN | Assign one object to another, like assigning a sequence to an executor. |
| AT (operational form) | Set a value to something. |
| COPY | Make a copy of an object. |
| DELETE | Delete an object. |
| EDIT | Edit an object. |
| IFOUTPUT | Create a selection depending on an objects stage output. |
| INSERT | Insert an object at another location. |
| INVERT | Invert the selection. |
| LABEL | Change name of an object |
| MOVE | Move an object to another location. |
| PREVIEW | Have a look at an object without stage output. |
| STORE | Store data into an object. |
| UPDATE | Update data of active object. Active objects create stage output. |

### Executing Keywords

Executing keywords may be used as starting keywords, or as source in an assign operation.
As starting keywords they expect object keywords as targets for their operations.

| Keyword | Operation |
|---|---|
| <<< | Go back with no time |
| >>> | Go forward with no time |
| FIX | Fix an executor. This executor will ignore page changes. |
| FLASH_DOWN ~_OFF | Temporary down flash of executor. |
| FLASH_UP ~_OFF | Temporary up flash of executor |
| GO | Go forward. |
| GO- | Go backwards |
| GOTO | Goto cue |
| LEARN | Learn speed |
| LOAD | Prepare next step of executor, wait for GO. |
| OFF | Switch off something. |

| | |
|---|---|
| ON | Switch on something. |
| PAUSE | Pause |
| SELECT | Select default executor. |
| SWOP ~_OFF | Temporary up flash for executor and downflash for all others. |
| TEMP | Temporarily run an executor. |
| TOGGLE | Toggle executor on and off. |
| TOP | Goto first cue. |

## Object Keywords

Object keywords are used as targets by basic operational keywords and by executing keywords. They represent data, that can be manipulated.

| Keyword | Meaning |
|---|---|
| ALL_CHASES | All executors assigned as chasers. |
| ALL_SEQUENCES | All executors assigned as sequence. |
| CHANNEL | A conventional light. |
| CUE | One step or memory of a cuelist. |
| DMX | A DMX channel. |
| DMX_BTN | A Remote triggered by incoming DMX signals. |
| EFFECT | An freely editable effect generator. |
| EXEC | An executor is the physical front end for executing sequences etc. |
| FADER | A executor fader. |
| FADERBUTTON1 | The middle button of an executor column. |
| FADERBUTTON2 | The lower button of an executor column. |
| FADERBUTTON3 | The upper button of an executor column. |
| FIXTURE | A complex light that has more than just a dimmer channel. |
| FEATURE | A feature inside a fixture, like PAN or IRIS. |
| FORM | A 1 or 2 dimensional path, used by effects. |
| GROUP | A collection of fixtures and channels. |
| MACRO | Can do complex command line operations. |
| MDI_BTN | A Remote triggered by incoming MIDI signals. |
| PAGE | A page is one set of visible executors. |
| PRESET | A memory that can be used indirectly as a placeholder. |
| SEQU | A sequence consists of one or more cues. |
| TIMECODE | A timecode show consists of many timed playback instructions for executors. Can be synchronised with incoming SMPTE or MIDI signals. |
| TOUCH_BTN | A Remote triggered by hardwired analogue 0/10 V inputs. |
| VIEW | Stores a display arrangement. |
| VIEWBTN | A physical button that can call views and macros. |

## Helping keywords

Helping keywords are context sensitive and thus have different functions depending on where they are used and what they are used with.

| Keyword | Used ... |
|---|---|
| + | Everywhere ... |
| - | Everywhere ... |
| AT (helping form) | by COPY/MOVE etc. |
| DELAY | In executing commands ,AT, STORE etc |
| FADE | In executing commands, AT,STORE etc |
| FULL | As value 100 % |
| IF | In selections |
| THRU | In ranges |
| UNPRESS | After executing keywords |

## Immediate Keywords

These keywords expect no additional parameters.

| Keyword | Operation |
|---|---|
| ALL | Restores selection after ODD/EVEN NEXT/PREVIOUS. |
| CLEAR | Progressively clear the programmer. |
| CLEAR_ACTIVE | Clear the values in the programmer. |
| CLEAR_ALL | Totally clear programmer at once. |
| CLEAR_SELECTION | Clear the current selection. |
| DEF_GO | Go forward for default executor |
| DEF_GO- | Go back for default executor |
| DEF_PAUSE | Pause the default executor. |
| ESC | Escape from input or menu. |
| EVEN | Select even devices inside current selection. |
| NEXT | Select next device inside current selection. |
| ODD | Select odd devices inside current selection. |
| OOPS | Oops, I mad a mistake -> Undo |
| PREVIOUS | Select previous device inside current selection |
| VALUE | Switch back from fade or delay to value mode. |
| UPDATE | Update data of active object. Active objects create stage output. |

## The DEFAULT keyword

The command line has a DEFAULT keyword.
Whenever you ***start a new command line with numeric values***, this default keyword will be used.

Assume that the default keyword is CHANNEL. When you type in:
1 ENTER. In the command line will appear CHANNEL 1 ENTER.

If the command line is empty, the current default keyword is shown by:
a) LED in the physical key
b) the command line window

### The following keywords can be the default keyword:

| | |
|---|---|
| CHANNEL * | PAGE |
| FIXTURE * | MACRO |

| | |
|---|---|
| GROUP | PRESET |
| SEQU | VIEW |
| CUE | EFFECT |
| EXEC | |

The default keyword is also used by operational keywords.

Assuming that the default keyword is GROUP. Then you are typing in:

DELETE 1 ENTER. As a result, GROUP 1 will be deleted !

An exception to this are the keywords CHANNEL and FIXTURE. If they are the default keywords, operational keywords will use CUE as the default keyword !

If CHANNEL is the default keyword. STORE 5 ENTER will do STORE CUE 5 !

## 9.3.2 Ranges and Range Lists

Many commands are able to operate on a list of objects.

Instead of typing

DELETE SEQU 1 ENTER

DELETE SEQU 2 ENTER

DELETE SEQU 10 ENTER

you can write

DELETE SEQU 1 THRU 2 +10 ENTER.

**A range can have the following formats:**

| | |
|---|---|
| X | only object X |
| X THRU Y | from object X to object Y |
| X THRU | from object X to the last object (very dangerous!) |
| THRU Y | from the first object to object Y (very dangerous!) |
| THRU | all objects (very dangerous!) |

Please note that ranges have a direction. This is particularly important when creating selection. FIXTURE 1 THRU 10 is very different than FIXTURE 10 THRU 1.

**Ranges can be combined to Range Lists:**

OBJECT_KEYWORD Range1 +/- [OBJECT_KEYWORD] Range2 ...

It is not necessary to repeat the OBJECT_KEYWORD in the range list.

## 9.3.3 Detailed keyword list

### + (Plus )

**Classification :** helping keyword

**a) As starting keyword**, + enlarges the current selection. Everything that follows after the plus will be interpreted as a selection:

+ CHANNEL,FIXTURE,GROUP,SEQU,CUE,EXEC,PRESET,EFFECT

**b) In object lists** it is including objects:

... OBJECT 1 + OBJECT 2 ....

**c) In front of values** it is changing the value to a positive relative value:

CHANNEL 1 AT +10 ENTER will increase the dimmer value by 10%.

**d) As a starting keyword**, and **repeated**, + is increasing the dimmer values of the current selection by 10% every time you press +.

### - (Minus)

**Classification :** helping keyword

**a) As starting keyword**, - reduces the current selection. Everything that follows after the minus will be interpreted as a selection:

- CHANNEL/FIXTURE/GROUP/SEQU/CUE/EXEC/PRESET/EFFECT

**b) In object lists** it is excluding objects:

... OBJECT 1 THRU 10 - OBJECT 2 ....

**c) In front of values** it is changing the value to a negative relative value:

CHANNEL 1 AT -10 ENTER will decrease the dimmer value by 10%.

**As a starting keyword**, and **repeated**, - is decreasing the dimmer values of the current selection by 10% every time you press -.

## <<< (Go backwards with no time)

**Classification** : executing keyword

a) **As starting keyword**, every object that follows after the <<< will try to **go back** one step with **zero fade time**.

<<< (target object list) [ENTER]

| Target type | Operation |
|---|---|
| EXEC | Go backwards one step with no fade time |
| EFFECT | Start running backwards without fading in |
| TIMECODE | Jump to the previous breakpoint |
| PAGE | Does a <<< on all executors on that page. |
| SPEEDMASTER (executor assigned to a speed master) | Does a <<< on all chases using that speed master |

b) In an assign command***, this function can be put on an executor button (see ASSIGN).***

## >>> (Go forward with no time)

**Classification *:*** executing keyword

c) As starting keyword***, every object that follows after the >>> will try to*** go forward ***one step with*** zero fade time.

>>> (target object list) [ENTER]

| Target type | Operation |
|---|---|
| EXEC | Go forward one step with no fade time |
| EFFECT | Start running forward without fading in |
| TIMECODE | Jump to the next breakpoint |
| PAGE | Does a >>> on executors on that page. |
| SPEEDMASTER (executor assigned to a speed master) | Does a >>> on all chases using that speed master |

d) **In an assign command**, this function can be put on an executor button (see ASSIGN).

## ALL

**Classification** : immediate keyword

ALL is clearing any sub-selection made with ODD EVEN NEXT and PREVOIUS.

## ALL_CHASES

**Classification *:*** object keyword

ALL_CHASES is an alias for the expression ALL EXECUTORS THAT ARE ASSIGNED AS CHASES. It can be used wherever EXEC could be used. Example:

PAUSE ALL_CHASES ENTER

## ALL_SEQUENCES

**Classification** : object keyword

ALL_SEQUENCES is an alias for the expression ALL EXECUTORS THAT ARE ASSIGNED AS SEQUENCE. It can be used wherever EXEC could be used. Example:

OFF ALL_SEQUENCES ENTER

## ASSIGN

**Classification** : operational keyword

ASSIGN (source objects) (destination objects) [ ENTER ]

Source objects : a list of objects which are of the same type.

Destination objects: a list of objects which are of the same type

| Source object type | Possible destination object type |
|---|---|
| Executing keyword | EXEC,FADERBUTTON1/2/3 |
| SEQUENCE | EXEC,FADERBUTTON1/2/3 |
| GROUP | EXEC,FADERBUTTON1/2/3 |
| EFFECT | EXEC,FADERBUTTON1/2/3 |
| VIEW | VIEWBTN |
| MACRO | VIEWBTN |

Executor buttons and view buttons as hard keys automatically perform the ENTER.

## AT

**Classification** : operational and helping keyword

a) As operational keyword:

### AT TYPE 1: Inputing dimmer values directly

[ (destination objects) ] AT values [ FADE fades] [ DELAY delays] ENTER

Destination objects: A list of objects that can create selections. Usable keywords are:
CHANNEL,FIXTURE,GROUP,SEQU,CUE,PRESET,EFFECT.
If no destination objects are given, the current selection will be used.

Values: VALUE_X [THRU VALUE_Y] in percent

Fades: FADE_X [THRU FADE_Y ] in seconds

Delays: DELAY_X [THRU DELAY_Y] in seconds
Values, fades and delays are decimal numbers with dots ( e.g. FADE 1.5 ).

Examples:
CHANNEL 1 THRU 10 AT 20 FADE 2.5 DELAY 0 THRU 5 ENTER
Will put channels 1 through 10 at 20% and give them all a fade time of 2.5 seconds. It will also stagger a delay time across all 20 channels, with channel 1 having the longest delay time and channel twenty having no delay time at all.

CUE 1 AT FULL ENTER

This will set the dimmer of all devices contained in CUE 1 of the default executor to 100%.

### AT TYPE 2: Copying values with filtering:

[ (destination objects) ] AT [set AT filtering] (source objects) ENTER

Destination objects: Same as above.

Source objects: A list of objects that can supply values. Usable keywords are:
CHANNEL,FIXTURE,GROUP,SEQU,CUE,PRESET.

Set AT filtering: Keep AT pressed. After half a second the AT filter menu will appear. Change the filtering while you keep AT pressed.

If the source objects are CHANNEL, FIXTURE or GROUP, the operation will be a

**FILTERED COPY INSIDE THE PROGRAMMER**
**All values except default values will be copied if they pass the filter !**

Examples:
FIXTURE 2 THRU 10 AT ( select CMY colour mixing) FIXTURE 1 ENTER
This command will copy the CMY colour of fixture 1 to fixtures 2 THRU 10.

You can copy patterns: Set fixture 1 to BLUE and fixture 2 to GREEN.
FIXTURE 3 THRU 10 AT (select colour) FIXTURE 1 THRU 2 ENTER
Fixture 3 will be BLUE, 4 is GREEN, 5 is BLUE, 6 is GREEN ...

Source and destination devices can overlap:
FIXTURE 1 THRU 10 AT (select all features) FIXTURE 2 THRU 10 + 1 ENTER
This will perform a circular copy, shifting the values from device to device.

If the source objects are SEQU,CUE or PRESET, the operation will be a

**FILTERED EXTRACTION TO THE PROGRAMMER**
**All values that exist in the source for the destination devices will be copied if they pass the filter !**

Examples:
FIXTURE THRU AT (select PAN/TILT) CUE 1 ENTER.
This will bring all PAN/TILT information contained in CUE 1 of the default executor active into the programmer.

CUE 5 AT (select GOBO) CUE 4 ENTER.
Devices of cue 5 get the gobos of cue 4 (of course only if the gobos were programmed into cue 4).

CUE 5 AT (select GOBO) CUE THRU 4 ENTER
Devices of cue 5 get the gobos **of the STATUS** of cue 4 ! This is very different to the previous example !!!

b) **As helping keyword**: See COPY MOVE and INSERT.

## CHANNEL

**Classification** : object keyword

a) **as starting keyword**:

CHANNEL ENTER
CHANNEL becomes the DEFAULT KEYWORD.

CHANNEL (range list) ENTER
Select channels in range list.

CHANNEL (range list) AT ... (see AT)
Apply values to channels in range list.

Channel numbers in the range list must be in the interval [ 1 ... 9999].

b) **as target for the following executing commands**:

| | |
|---|---|
| ON | activate dimmer value in programmer. |
| OFF | deactivate dimmer value in programmer and deselect channel. |
| PAUSE | PARK dimmer value of channel. |
| GO | UNPARK dimmer value of channel. |

## CLEAR

**Classification** : immediate keyword

Progressively performs:

1) If there is a selection -> CLEAR_SELECTION

2) If there is an activation -> CLEAR_ACTIVE

3) If there is stage output from programmer -> CLEAR_ALL

## CLEAR_ACTIVE

**Classification** : immediate keyword

Clears the activation in the programmer without destroying stage output.

## CLEAR_ALL

**Classification** : immediate keyword

Clears the selection.
Clears the activation.
Clears the programmer totally, all values returned to default or to playback control.
ODD/EVEN/Sub-selection is reset to ALL.

## CLEAR_SELECTION

**Classification** : immediate keyword

Clears the selection. No device is selected.
ODD/EVEN/Sub-selection is reset to ALL.

## COPY

**Classification** : operational keyword

COPY (source objects) AT (destination objects) [ ENTER ]

Source objects : a range list of objects which are all of type X.
Destination objects: a range list of objects which are all of type Y

Object types X and Y must be equal or compatible.

| Source object types | Compatible destination object types |
|---|---|
| EXEC | EXEC |
| FADERBUTTON/123 | FADERBUTTON/1/2/3 |
| DMX_BUTTON | DMX_BUTTON |
| MIDI_BUTTON | MIDI_BUTTON |
| TOUCH_BTN | TOUCH_BTN |

### Currently there are some limitations for copying CUES:

1) A range list of cues can be
   a. A single cue e.g. CUE 1
   b. A range of cues. e.g. CUE 1 THRU 10

2) Also the destination object must be a CUE.
   Therefore the syntax COPY CUE 1 SEQU 1 AT SEQU 2 ENTER is not allowed.
   Instead you must write COPY CUE 1 SEQU 1 AT CUE 2 SEQU 2 ENTER.

   Please note, that CUE 1 SEQU 1 equals the term SEQU 1 CUE 1. Whenever the term contains CUE, you are copying CUES !

## CUE

**Classification** : object keyword

**General Format:**

| Expression | Normal meaning | In case of STORE |
|---|---|---|
| CUE | Current active cue of running default executor | New cue at the end in default executor |
| CUE X | Cue X of default executor | |
| CUE X SEQU Y | Cue X of sequence Y | |
| SEQU Y CUE X | Same as above ! | |
| CUE EXEC Z | Current active cue of running executor Z | New cue at the end in executor Z |
| CUE X EXEC Z | Cue X of executor Z | |

X Cue number in format A.B with intervals [ 0...999].[0...999] , B is optional.
"CUE 0" is invalid, but "CUE 0.5" is valid.

Y Sequence number in interval [ 1 ... 999 ]

Z Executor number in format PAGE.INDEX with intervals [ 1 ... 64].[1...60] ,
or in format INDEX with interval [1...60] using current page.

Either X or Y,Z can be range lists. Range lists with X and Y,Z are not allowed. Therefore:

| | |
|---|---|
| CUE 1 THRU 10 SEQU 1 | is valid |
| CUE 1 TRUE 10 SEQU 1 THRU 5 | is invalid |

a) **as starting keyword**:

CUE ENTER

CUE becomes the DEFAULT KEYWORD.

CUE (range list) ENTER

Select devices included in cue(s).

CUE (range list) AT ... (see AT)

Apply values to devices included in cue(s).

b) **as target for the following operational commands**:

| | |
|---|---|
| AT | Extract data from cue |
| COPY | Copy one cue to another |
| DELETE | Delete a cue |
| EDIT | Edit a cue |
| IF | Select devices which are Part of the cue. |
| IFOUTPUT | Search for stage output of cue |
| INVERT | Invert selection of cue |
| LABEL | Change name of cue |
| MOVE | Move cue to another position |
| PREVIEW | Preview cue |

c) **as target for the following executing commands**:

| | |
|---|---|
| ON | activates content of cue in programmer. |
| OFF | deactivate content of cue in programmer. |
| PAUSE | PARK all features included in cue. |
| GO | UNPARK all features included in cue. |
| LOAD | Prepare cue X as next cue for executor Z. |
| GOTO | Executor Z is calling cue X |

## DEF_GO

***Classification*** : immediate keyword

Is performing a GO on the default executor.

## DEF_GO-

***Classification*** : immediate keyword

Is performing a GO- on the default executor.

## DEF_PAUSE

***Classification*** : immediate keyword

Is performing a PAUSE on the default executor.

## DELAY

**Classification** : helping keyword

**a) With executing keywords and executors**
**(Executing keyword) (Executor List) DELAY X.X ENTER**
The execution command is performed on all listed executors with a snap delay overwrite of X.X seconds. Does not work with PAUSE or flashing commands.

**b) Giving individual delay times to fixtures or channels:**
**[Selection] AT DELAY X.X [TRHU Y.Y] ENTER**
Individual delays for the feature shown in the preset bar will be set to X.X seconds.
If no selection is given, the current selection is used.
Please note that the given delay may be a range. In this case, delays will be aligned over the given selection.
The given delays can be signed, which will result in relative changes of individual delays.
Giving individual delays can be combined with giving individual fades and values into one AT command.

**c) Clearing individual delays:**
**[SELECTION] AT DELAY ENTER**
Works very much like b), but no value for the delay is given.

**d) Setting default snap delay:**
**(No selection present) DELAY X.X ENTER**
The next cue will be stored with X.X seconds snap delay default for all snap channels.

**e) As snap delay when storing a cue:**
**STORE (List of Cues) DELAY X.Y ENTER**
The given cues will be stored with a snap delay default of X.Y seconds for all snap channels.

**f) Switching to delay display mode:**
**DELAY ENTER**
All sheets wich are set to AUTO display mode, will display delays instead of values. This effect is only temporary. All sheets will switch back to value mode upon ending of the next command line operation.

## DELETE

**Classification** : operational keyword

DELETE (object list) ENTER

Some forms of delete will need no ENTER in the end:
DELETE (hit key in a pool)
DELETE [CUE] X (hit executor button)
DELETE (hit viewkey)

All objects in the list must be of the same type. You can not delete a preset and a cue at the same time.
Deleting an object that is assigned to an executor will also delete the executor.
Deleting an object that is assigned to a viewkey will also delete the viewkey.

| Object | Comment |
|---|---|
| CUE | If no sequence or executor is specified, the sequence of the default executor is used. If the last cue of a sequence is deleted, the whole sequence is deleted. |
| DMX_BTN | |
| EFFECT | Do not delete effects which are used by sequences. |
| EXEC | Deleting an executor does not delete the sequence, group etc. assigned to it. |
| FORM | Do not delete forms which are still in use by effects. |
| GROUP | Deleting a group will also delete its submaster functionality. |
| MACRO | You can not delete a macro that is currently recording. |
| MIDI_BTN | |
| PAGE | Deleting a page will delete all executors on that page. |
| PRESET | Deleting single presets is done with the syntax PRESET X.Y with X=preset type and Y=preset number. DELETE PRESET X will ask for confirmation and delete all presets of the given type. |
| SEQU | |
| TIMECODE | |

TOUCH_BTN

VIEW

VIEWBTN

## DMX

**Classification** : object keyword

**NOT IMPLEMENTED YET.**

**DMX** is accessing directly a DMX address.

## DMX_BTN

**Classification** : object keyword

A DMX_BTN (dmx button) is a remote function triggert by incoming DMX signals.
The DMX_BTN simulates an executor keypress, therefore it is working only in combination with an assigned executor. DMX_BTNs can be seen under TOOLS / REMOTE DMX menu.

**Calling a DMX_BTN manually:**
**DMX_BTN X ENTER**

**Linking a DMX_BTN to an executor:**
**STORE DMX_BTN X EXEC/FADEREBUTTON1/2/3 Y.Z ENTER**
Using EXEC in this command will always link the remote to the middle executor button.

X must be in the range from 1 to 96.

## EDIT

**Classification** : operational keyword

**a) Simulating a right click of the mouse for editing an input field or a cell in a grid:**

EDIT (use touchscreen to click somewhere) or

EDIT (left-mouse-click somewhere)

**b) Starting EDIT / UPDATE procedure:**

The whole procedure works as follows:

- EDIT object ENTER
  Only one object can be edited at once. If the edit / update procedure is still running for another object, you will be asked to update the old one first.
- Programmer is cleared, and the values and selection of the object is loaded into the programmer.
- All titles of fixture and channel sheet will show the name of the “edit object”.
- Change values and selection in the programmer as required.
- UPDATE starts flashing as soon as values are changed.
- Hit UPDATE. You will be asked for a confirmation and then changed values and selection is stored back into the object.
- ESC will quit the EDIT / UPDATE procedure without updating the object at any time.

**Objects that can be edited in this way are:**

| Syntax, start with EDIT ... | Comment |
|---|---|
| CUE ENTER | Edit active cue of default executor |
| [CUE] X ENTER | Edit cue X of default executor |
| CUE X SEQUENCE Y ENTER | |
| CUE X EXEC Y.Z ENTER | |
| CUE X (hit executor) | |
| SEQUENCE X ENTER or hit key in sequence pool window | Will edit first cue of sequence X |

| | |
|---|---|
| GROUP X ENTER or hit key in the group pool window | Although a group has no values, the selection can be edited. |
| PRESET X ENTER or hit preset type on the preset control bar of fixture sheet. | Will edit first non-empty preset of type X |
| PRESET X.Y ENTER or hit key in preset pool window | |

**c) Continue EDIT / UPDATE procedure with NEXT / PREVIOUS object:**

EDIT NEXT [ENTER]
EDIT PREVIOUS [ENTER]
If you use the NEXT and PREVIOUS hard-keys, ENTER is not necessary.
Next and previous will continue edit/update with the next/previous non-empty object in the context of the current "edit object".
Examples:

- EDIT PRESET 1 ENTER. Starts edit/update for first non-empty PAN/TILT preset.
  EDIT NEXT goes on to the next non-empty PAN/TILT preset.
- EDIT SEQUENCE 1 ENTER. Starts edit/update for first cue.
  EDIT NEXT goes on to second cue.

Together with the HIGHLIGHT function, EDIT NEXT is a very powerful tool to for checking your stage presets.

**d) Opening an edit screen:**

Some objects can not be edited in the programmer. They have edit screens to manipulate them. Only one edit menu for only object can be open at one time. If you open an edit menu for an object, all other edit menus will close. Edit menus can be closed with the ESC key.

| | | |
|---|---|---|
| EDIT EFFECT X ENTER | or | EDIT (hit key in effect pool) |
| EDIT EXEC X.Y ENTER | or | EDIT (hit executor) |
| EDIT FORM X ENTER | or | EDIT (hit key in form pool) |
| EDIT MACRO X ENTER | or | EDIT (hit key in macro pool) |
| EDIT TIMECODE X ENTER | or | EDIT (hit key in timecode pool) |

## EFFECT

**Classification** : object keyword

**a) as starting keyword:**

EFFECT ENTER
EFFECT becomes the DEFAULT KEYWORD.

EFFECT (range list) ENTER
Start effects in range list.

Effect numbers in the range list must be in the interval [ 1 ... 999].

**Effects are numbered in a certain way:**

| Range | Meaning |
|---|---|
| 1 ... upwards | User created effects |
| 899 ... downwards | Automatic created effects used by cuelists |
| 900 ... upwards | Temporary effects, created from preset effects. These effects are not visible in pools. |

**c) as target for the following operational keywords:**

| | |
|---|---|
| ASSIGN | Assign an effect to an executor |
| COPY | Copy one effect to another |
| DELETE | Delete an effect |
| EDIT | Open edit menu for effect |
| IF | Deselect devices that are not included in effect |
| IFOUTPUT | Select devices that have stage output from the effect |

INSERT/MOVE Change visible number of effect

LABEL Change name of effect

**c) as target for the following executing commands:**

GO Run forward, start with fade in

GO- Run backwards, start with fade in

>>> Run forward, no fade in

<<< Run backwards, no fade in

PAUSE Pause, stand still

OFF Switch off, fading out

## ESC

**Classification** : immediate keyword

**ESC** (Escape) will progressively perform the following actions:

a) Is there something in the command line ? Yes -> clear commandline !

b) Is edit/update procedure running ? Yes -> cancel edit update

c) Is there an open window or a message box ? Yes -> close it !

d) Is there an edit menu open ? Yes -> close it !

## EVEN

**Classification** : immediate keyword

EVEN creates a sub-selection from the current selection.

If you have selected 10 fixtures and then select **EVEN**, only the 2nd, 4th,6th,8th and 10th fixture in this selection stays selected. The others have become "temporarily deselected", waiting to be fully selected again by the **ALL** command.

## EXEC

**Classification** : object keyword

| Format | Meaning |
|---|---|
| EXEC X [THRU [Y]] | Executors X to Y of current page |
| EXEC P.X [THRU [Q.Y]] | Executors X of page P to exec Y of page Q |
| EXEC X [THRU [Y]] PAGE P [THRU [Q]] | Executor X to Y of page P to Q |

- Executor number X/Y must be in the range of [ 1 .. 60 ] where

[1..20] is adressing the motorized fader executors and

[21 .. 60] is addressing the button executors.

- Page numbers P/Q must be in the range of [1 .. 64 ].

**a) as starting keyword:**

EXEC ENTER
EXEC becomes the DEFAULT KEYWORD.

EXEC (range list) ENTER
Select devices included in objects to given executors.

EXEC (range list) AT ... (see AT)
Apply values to devices included in objects assigned to given executors.

**a) as target for the following operational commands:**

| | |
|---|---|
| ASSIGN | SEQUENCE,GROUP and EFFECT objects can be assigned with the command line to an executor. EXECUTING COMMANDS can be assigned with the command line to an executor´s button. For fader executors, the keyword EXEC specifys the middle key. |
| COPY | Copy one executor to another |
| DELETE | Delete an executor. This does not destroy the object that is assigned to the executor. |
| EDIT | Edit the object that is assigned to the executor. |
| IF | Deselect devices which are not part of executor´s object´s selection. |
| IFOUTPUT | Select devices which have stage output from this executor |
| INVERT | Invert current selection by the selection of executor´s object. |
| LABEL | Change name of executor´s object. |
| MOVE | Move executor to another position |
| PREVIEW | Preview executors object. If the object is a sequence, and the executor is running, the next cue will be previewed. |

**b) as target for ALL executing commands.**

Please look at **9.3.1 Executing Keywords** for a summary or look at those keywords for details.

## FADE

**Classification** : helping keyword

**a) With executing keywords and executors**
**(Executing keyword) (Executor List) FADE X.X ENTER**
The execution command is performed on all listed executors with a fade overwrite of X.X seconds. Does not work with PAUSE or flashing commands.

**b) Giving individual fade times to fixtures or channels:**
**[Selection] AT FADE X.X [TRHU Y.Y] ENTER**
Individual fades for the feature shown in the presetbar will be set to X.X seconds.
If no selection is given, the current selection is used.
Please note that the given fade may be a range. In this case, fades will be aligned over the given selection.
The given fades can be signed, which will result in relative changes of individual fades.
Giving individual fades can be combined with giving individual delays and values into one AT command.

**c) Clearing individual fades:**
**[SELECTION] AT FADE ENTER**
Works very much like b), but no value for the fade is given.

**d) Setting default in & outfade:**
**(No selection present) FADE X.X ENTER**
The next cue will be stored with X.X seconds basic fade and outfade for all non-snap channels.

**e) As in & outfade when storing a cue:**
**STORE (List of Cues) FADE X.Y ENTER**
The given cues will be stored with a basic fade and outfade of X.Y seconds for all non-snap channels.

**f) Switching to fade display mode:**
**FADE ENTER**
All sheets wich are set to AUTO display mode, will display fades instead of values. This effect is only temporary. All sheets will switch back to value mode upon ending of the next command line operation.

## FADER

**Classification** : object keyword

| Format | Meaning |
|---|---|
| FADER X [THRU [Y]] | Fader X to Y of current page |
| FADER P.X [THRU [Q.Y]] | Fader X of page P to fader Y of page Q |
| FADER X [THRU [Y]] PAGE P [THRU [Q]] | Fader X to Y of page P to Q |

- Fader number X/Y must be in the range of [ 1 .. 20 ]
- Page numbers P/Q must be in the range of [1 .. 64 ].

Only one command is implemented for the fader keyword:

**FADER (list of faders) AT (value list) [ENTER]**

This command will set the motorized faders to the given values.

## FADERBUTTON1

**Classification** : object keyword

The same as EXEC, but in case of ASSIGNMENTS it is explicitely pointing to the MIDDLE button.

## FADERBUTTON2

**Classification** : object keyword

The same as EXEC, but in case of ASSIGNMENTS it is explicitely pointing to the LOWER button.

## FADERBUTTON3

**Classification** : object keyword

The same as EXEC, but in case of ASSIGNMENTS it is excplicitely pointing to the UPPER button.

## FEATURE

**Classification** : object keyword

**NOT IMPLEMENTED YET.**

**FEATURE** is accessing a FEATURE inside a FIXTURE, like PAN or IRIS.

## FIX

**Classification** : executing keyword

a) **As starting keyword**, it is used to fix / unfix **EXECUTORS**. A fixed executor is physically present on all pages.

**FIX (executor list) [ENTER]**

**b) In an assign command**, this function can be put on an executor button (see ASSIGN).

## FIXTURE

**Classification** : object keyword

**a) as starting keyword:**

FIXTURE ENTER
FIXTURE becomes the DEFAULT KEYWORD.

FIXTURE (range list) ENTER
Select fixtures in range list.

FIXTURE (range list) AT ... (see AT)
Apply values to fixtures in range list.

Fixture numbers in the range list must be in the interval [ 1 ... 9999].

**b) as target for the following executing commands:**

| | |
|---|---|
| ON | activate all feature values in programmer. |
| OFF | deactivate all feature values in programmer and deselect fixture. |
| PAUSE | PARK all features of fixture. |
| GO | UNPARK all features of fixture. |

## FLASH_DOWN

**Classification** : executing keyword

**a) As starting keyword**, every executor that follows after FLASH_DOWN reduces its intensity channels to zero with no time.

**FLASH_DOWN (executor list) [ENTER]**

**b) As starting keyword** combined with **UNPRESS**, every executor that follows returns its intensity channels to their previous levels.

**FLASH_DOWN (executor list) UNPRESS [ENTER]**

**a) In an assign command**, this function can **NOT** be used. You have to use the Assign menu for putting it on an executor button. It is simply called **FLASH** there.

Note: It is almost impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button or as part of a macro!

## FLASH_DOWN_OFF

**Classification** : executing keyword

Same as FLASH_DOWN ... UNPRESS.
Please look at the FLASH_DOWN command description.

## FLASH_UP

**Classification** : executing keyword

**a) As starting keyword**, every executor that follows after FLASH_UP outputs all intensity channels of the current cue to 100% of their programmed value.

**FLASH_UP (executor list) [ENTER]**

**b) As starting keyword** combined with **UNPRESS**, every executor that follows after FLASH_UP returns all intensity channels of the current cue back to their previous state.

**FLASH_UP (executor list) UNPRESS [ENTER]**

**c) In an assign command**, this function can **NOT** be used. You have to use the Assign menu for putting it on an executor button. It is simply called **OUT** there.

Note: It is almost impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button or in a macro !

## FLASH_UP_OFF

**Classification** : executing keyword

Same as FLASH_UP ... UNPRESS.
Please look at the FLASH_UP command description.

## FORM

**Classification** : object keyword

**a) as starting keyword it has no function.**

FORM (range list) ENTER

Form numbers in the range list must be in the interval [ 1 ... 999].

**b) as target for the following commands:**

| | |
|---|---|
| COPY | Copy one form to another |
| DELETE | Delete a form |
| EDIT | Open edit menu for form |
| INSERT/MOVE | Change visible number of form. |

## FULL

**Classification** : helping keyword

Full is an alias for 100% dimmer value (open).

a) As starting keyword, it is immediate, opening all dimmers of the current selection:

FULL

b) After the AT command in value ranges like:

**... AT FULL ENTER**

**... AT 0 THRU FULL ENTER**

## GO

**Classification** : executing keyword

**a) As starting keyword**, every object that follows after the GO will try to **go forward** one step.

**GO (target object list) [FADE X] [DELAY Y] [ENTER]**

If fade or delay are given, they overwrite the pre-programmed times.

| Target type | Operation |
|---|---|
| EXEC | Go forward one step |
| EFFECT | Start running forward |
| TIMECODE | Start playing forward |
| PAGE | GO on all its executors. |
| SPEEDMASTER (executor assigned to a speed master) | GO on all chasers using this speed master |
| SUBMASTER | Unpark all channels involved in this group. |
| CHANNEL, FIXTURE, GROUP | Unpark devices. |
| PRESET X (Preset Type) | Unpark all channels of current selection of that preset type. |

**b) In an assign command**, this function can be put on an executor button (see ASSIGN).

## GO-

**Classification** : executing keyword

**a) As starting keyword**, every object that follows after the GO will try to **go backwards** one step.

**GO- (target object list) [FADE X] [DELAY Y] [ENTER]**

If fade or delay are given, they overwrite the default GO- times.

The default GO- times can be changed in the SETUP / DEFAULTS menu.

| Target type | Operation |
|---|---|
| EXEC | Go backwards one step |
| EFFECT | Start running backwards |
| PAGE | GO- on all its executors. |
| SPEEDMASTER (executor assigned to a speed master) | GO- on all programs using this speed master |

**b) In an assign command**, this function can be put on an executor button (see ASSIGN).

## GOTO

**Classification** : executing keyword

**a) As starting keyword**, every executor that follows after the GOTO will try to **go directly to a given step.**

**GOTO [CUE] [W] [EXEC X] [FADE Y] [DELAY Z] [ENTER]**

Using the keyword CUE is optional.
If W (cue number) is not given, you will be prompted for it.
If executor is not given, default executor will be used.
If fade or delay are given, they overwrite the default GOTO times.
The default GOTO times can be changed in the SETUP / DEFAULTS menu.

**b) In an assign command**, this function can be put directly on to an executor button (see ASSIGN).
In actual fact you will end up with an LOAD assigned to the executor button as it has to ask for the cue number.

## GROUP

**Classification** : object keyword

**a) as starting keyword:**

GROUP ENTER
GROUP becomes the DEFAULT KEYWORD.

GROUP (range list) ENTER
Select groups in range list.

GROUP (range list) AT ... (see AT)
Apply values to groups in range list.

Group numbers in the range list must be in the interval [ 1 ... 999].

**b) as target for the following executing commands:**

| | |
|---|---|
| ON | activate devices contained in group. |
| OFF | deactivate and deselect devices contained in group. |
| PAUSE | PARK all devices of group. |
| GO | UNPARK all devices of group. |

## IF

**Classification** : helping keyword

**IF** is performing a logical command within selections. It never enlarges the current selection. It leaves only those devices selected which are included in both selections:

Assuming that we have two groups (we will use real names to make it clearer):

| | |
|---|---|
| PAR64 | includes ALL PAR64 lamps |
| FRONT_TRUSS | includes ALL lamps on the front truss. |

**PAR64 IF FRONT_TRUSS ENTER** will therefore select all PAR64 which are on the front truss !

General Syntax:
**[ (selection1) ] IF (selection2) ENTER**
If selection1 is not given, the current selection will be used.

## IFOUTPUT

**Classification** : operational keyword

**IFOUTPUT** is selecting devices depending on the current stage output.

General syntax:
**IFOUTPUT (object list) [ENTER]**
If the object list is a hit on an executor´s button, or a click into an object pool window, ENTER is not needed.

Examples:

**IFOUTPUT EXEC 1 ENTER** All devices which have stage output from executor 1 will be selected.

**IFOUTPUT PRESET 1.1 ENTER** All devices which have the preset 1.1 active on stage will become selected. Very nice for selecting all fixtures that have a “blue star” currently on stage.

**IFOUTPUT (selection) ENTER** All devices of the given selection that have a stage output at the moment become selected.

**IFOUTPUT CUE/SEQUENCE/EFFECT** works accordingly.

## INSERT

**Classification** : operational keyword

INSERT (source objects) AT (destination ) [ ENTER ]

Example: INSERT GROUP 10 THRU 15 + 20 AT 1 ENTER

Insert is working ONLY with SORTABLE objects. Sortable objects are:
PRESET, GROUP,MACRO,VIEW,EFFECT,FORM,TIMECODE,SEQUENCE

Insert will try to make sufficient free space at the given destination by moving non-empty objects.

## INVERT

**Classification** : operational keyword

**INVERT (selection) [ENTER]**

INVERT is inverting the selected status of devices.

Example1:

Fixtures 1 through 5 are already selected.
INVERT FIXTURE 1 THRU 10 ENTER
Fixtures 6 through 10 are selected.

Example2:

All even fixtures of GROUP X are already selected.
INVERT GROUP X ENTER
All odd fixtures of GROUP X are selected.

Special case:

INVERT ENTER
The selected status of all devices that have ACTIVE channels in the programmer is inverted.

## LABEL

**Classification** : operational keyword

**LABEL (object list) ["NEW NAME"] ENTER**

All objects in the object list will be renamed to "NEW NAME".

Directly entering the new name is only possible with the PC keyboard.
If the name is not given directly within the command, you will be prompted for it.
If more than one object is to be labeled, the given name will be enumerated for every object:
**LABEL PRESET 4.1 THRU "COLOUR1" ENTER**
Preset 4.1 is named "COLOUR1"
Preset 4.2 is named "COLOUR2" and so on.

Please note that executors do not have a name of their own. Instead they show the name of the object assigned to it. In this way, labeling of an executor does not change the name of the executor, but of its object. Relabeling of executors can be very quicky done:
**LABEL hit executor, enter new name.**

Of course you can not change the name of an empty executor.

## LEARN

**Classification** : executing keyword

a) As starting keyword, every executor that follows after LEARN will use repeated learn comands to define a new speed.

**LEARN (executor list) ENTER**

**b) In an assign command**, this function can be put on an executor button (see ASSIGN).

The LEARN function works with CHASERS ( a sequence assigned to an executor in chaser mode) and with EFFECTS (regardless if they are assigned to an executor or not).
Note: It makes no sense to use this function by typing it into the command line. The LEARN function will calculate and average the timing between 2 to 4 LEARN commands and adapt its speed to that.

## LOAD

**Classification** : executing keyword

**a) As starting keyword**, every executor that follows after the LOAD will **go to a given cue upon the next MANUAL GO command.**

**LOAD [CUE] [W] [EXEC X] [ENTER]**

Giving the keyword CUE is optional.
If W (cue number) is not given, you will be prompted for it.
If executor is not given, default executor will be used.

**b) In an assign command**, this function can be put on an executor button (see ASSIGN).

## MACRO

**Classification** : object keyword

**a) as starting keyword, given macros will be executed.**

MACRO (range list) ENTER

Macro numbers in the range list must be in the interval [ 1 ... 999].

**b) as target for the following commands:**

| | |
|---|---|
| ASSIGN | A macro can be assigned to a VIEWBTN |
| COPY | Copy one macro to another |
| DELETE | Delete a macro |
| EDIT | Open edit menu for macro |
| INSERT/MOVE | Change visible number of macro |
| STORE | Start to record a macro from live actions. Macro recording is indicated by a flashing macro key. Macro recording is stopped with the command STORE MACRO ENTER.. |

**Macros can be timed.**
A timed macro plays back with the same timing as it was recorded.
Non-timed macros execute completely at once.

## MIDI_BTN

**Classification** : object keyword

A MIDI_BTN (midi button) is a remote function triggert by incoming midi note on/note off signals.

The MIDI_BTN simulates an executor keypress, therefore it is working only in combination with an assigned executor. MIDI_BTNs can be seen under TOOLS / REMOTE MIDI menu.

Calling a MIDI_BTN manually:
**MIDI_BTN X ENTER**

**Linking a MIDI_BTN to an executor:**
**STORE MIDI_BTN X EXEC/FADEREBUTTON1/2/3 Y.Z ENTER**
Using EXEC in this command will always link the remote to the middle executor button.

X must be in the range from 1 to 72.

## MOVE

**Classification** : operational keyword

MOVE (source objects) AT (destination objects) [ ENTER ]

Source objects : a range list of objects which are all of type X.
Destination objects: a range list of objects which are all of type Y

Object types X and Y must be equal or compatible (see COPY)

If object type is sortable, **MOVE object_a AT object_b** will exchange objects.
If object type in not sortable, object_b will be overwritten with object_a, then the original object_a will be deleted.

**Sortable objects are**:
PRESET, GROUP,MACRO,VIEW,EFFECT,FORM,TIMECODE,SEQUENCE

**Nonsortable objects are:**
EXEC,CUE,PAGE,VIEWBTN,DMXBTN,MIDIBTN,TOUCHBTN

**The following objects can not be moved**:
CHANNEL,FIXTURE,DMX,FEATURE,FADER

## NEXT

**Classification** : immediate keyword

***a) Create a subselection from the current selection:***
If you have selected more than one fixture and then say **NEXT**, only the first fixture stays selected and the others become "temporarly deselected".
The next time you say **NEXT**, only the 2nd fixture within the current selection is "really selected" and so on. The **ALL** command will clear this subselection.

**b) Continue EDIT / UPDATE procedure with NEXT object:**
See **EDIT**.

**c) Cursor Right in open dialog windows.**
In all temporary dialog windows and message boxes, you can use the **NEXT** key to move the input focus in that window to the right. Together with **PREVIOUS** and **ENTER** you can, for example, choose the appropriate answer in a message box.

## ODD

**Classification** : immediate keyword

**ODD** is creating a sub-selection from the current selection.

If you have selected 10 fixtures and the say **ODD**, only the 1st , 3th,5th,7th and 9th fixture in this selection stays Selected. The others become "Temporarily deselected", waiting to be fully selected again by the **ALL** command.

## OFF

**Classification** : executing keyword

**a) As starting keyword**, every object that follows after the OFF will be switched OFF.

**OFF (target object list) [FADE X] [DELAY Y] [ENTER]**

If fade or delay are given, they overwrite the default OFF time.
The default OFF times can be changed in the SETUP / DEFAULTS menu.

| Target type | Operation |
|---|---|
| EXEC | Switch off executor |
| EFFECT | Switch off effect (fading out) |
| TIMECODE | Stop timecode show |
| PAGE | Does OFF on all its executors. |
| SPEEDMASTER (executor assigned to a speed master) | Does OFF on all programs using this speed master |
| SUBMASTER | "Knock out" all channels involved in this group. |

| | |
|---|---|
| CHANNEL,FIXTURE and GROUP | "Knock out" all given devices. |
| PRESET X (Preset Type) | "Knock out" all channels of current selection of that preset type. |

"Knock out" means to clear the programmer completely for a channel.

**b) In an assign command**, this function can be put on an executor button (see ASSIGN).

## ON

**Classification** : executing keyword

**a) As starting keyword**, every object that follows after the ON will be switched ON without changing the current step.

**ON (target object list) [FADE X] [DELAY Y] [ENTER]**

If fade or delay are given, they overwrite the pre-programmed times.

| Target type | Operation |
|---|---|
| EXEC | Switch on executor |
| EFFECT | Switch on effect (fading in in last direction) |
| PAGE | Does On on all its executors. |
| SPEEDMASTER (executor assigned to a speed master) | Does On on all chasers using this speed master |
| SUBMASTER | "Knock in" all channels involved in this group. |
| CHANNEL,FIXTURE and GROUP | "Knock in" all given devices. |
| PRESET X (Preset Type) | "Knock in" all channels of current selection of that preset type. |

"Knock in" means to activate the programmer for a channel with its current value. This function can also be used to make "snapshots" of running programs.

**b) In an assign command**, this function can be put on an executor button (see ASSIGN).

## OOPS

***Classification***: immediate keyword

**OOPS, I made a mistake! Undo!**

**OOPS progressively performs:**
**- If the command line is not empty, a backspace in the command line.**
**- If the undo stack is not empty, an undo operation.**

Undos are created for programming actions such as storing a cue.
You can not do an undo for playback actions such as starting an executor.

The undo stack contains the last 10 programming operations, therefore you can go back 10 undos. Nevertheless a command like DELETE SEQU 1 THRU 10 (deletes 10 sequences) will create only one undo on the stack.

Working with undos can give you security during your programming, but for performance reasons on very large shows it can be switched off ( see SETUP / UNDO menu) .

## PAGE

**Classification** : object keyword

**a) As staring keyword, the given page will become the current page.**

**PAGE T.X ENTER**

***T*** Type of page in range [1..3]
Type 1 means Dimmer pages
Type 2 means Fader executor pages
Type 3 means Button executor pages

**X** For dimmer pages in range [ 1.. amount dimmers divided by 20 ]
For executor pages in range [1..64]

**PAGE X ENTER** Will select fader and button executor page together

**b) As target for the following operational commands:**

| | |
|---|---|
| COPY | Copy one page to another |
| DELETE | Delete a page |
| MOVE | Move a page to a different location |

**c) As target for all execution commands.**
The page will redirect the given commands to all its executors.

## PAUSE

**Classification** : executing keyword

**a) As starting keyword**, every object that follows after the PAUSE will be paused.

**PAUSE (target object list) [ENTER]**

| Target type | Operation |
|---|---|
| EXEC | Pause an executor |
| EFFECT | Pause an effect |
| PAGE | Pauses all executors on the page. |
| SPEEDMASTER (executor assigned to a speed master) | Pauses all chasers using this speed master |
| SUBMASTER | "Park" all channels involved in this group. |
| CHANNEL,FIXTURE and GROUP | "Park" all given devices. |
| PRESET X (Preset Type) | "Park" all channels of current selection of that preset type. |

"Park" means to freeze the output for a channel with its current value. Parked channels are shown with a bright blue background in the sheets. Although a channel is parked, it can still be used normally for programming purposes.

**b) In an assign command**, this function can be put on an executor button (see ASSIGN).

## PRESET

**Classification** : object keyword

**a) as starting keyword:**

**PRESET ENTER**
PRESET becomes the DEFAULT KEYWORD.

**PRESET T.X ENTER**
Call Preset X of type T.

X Preset number in range [ 1...999]
T Preset type in range [1...9]

**b) as target for the following operational commands:**

| | |
|---|---|
| COPY | Copy one preset to another |
| DELETE | Delete a preset |
| EDIT | Start edit / update procedure for preset |
| IF | Deselect devices which are not part of the preset. |
| IFOUTPUT | Search for stage output of preset |
| LABEL | Change name of preset |
| MOVE/INSERT | Move preset to another position |

## PREVIEW

**Classification** : operational keyword

PREVIEW (object) [ENTER]

Only one object can be previewed at one time.
Preview will show the content of the object in the fixture / channel sheets without outputing to stage (blind). Programmer contents is not destroyed but using Preview.

Preview will be indicated by all sheets, showing PREVIEW in their titles.

Preview is cancelled by the next command line operation.

## PREVIOUS

**Classification** : immediate keyword

**a) Create a subselection from the current selection:**
If you have selected more than one fixture and then say PREVIOUS, only the last fixture of the selection actually stays selected. The others become "temporarily deselected". The next time you say PREVIOUS, only the 2nd last fixture within the current selection is actually selected and so on. The ALL command will clear this subselection.

**b) Continue EDIT / UPDATE procedure with PREVIOUS object:**
See EDIT.

**c) Cursor Left in open dialog windows.**
In all temporary dialog windows and message boxes, you can use the PREVIOUS key to move the input focus in that window to the left. Together with NEXT and ENTER you can , for example , choose the appropriate answer in a message box.

## SELECT

**Classification** : executing keyword

**a) As starting keyword**, it is used to select the DEFAULT EXECUTOR.

**SELECT hit executor**
**SELECT EXEC X ENTER**

The default executor can be identified by its green title in the executor mini displays.
The default executor is reacting to the DEF_GO,DEF_GO- and DEF_PAUSE commands and to their physical counterpart, the three big yellow buttons.
During programming it can be very convenient to make the executor you are working on the default one. Many commands assume to work with the default executor if no other executor is given.
**b) In an assign command**, this function can be put on an executor button (see ASSIGN).

Pushing this button will select the executor of the button as default executor.

## SEQU

**Classification** : object keyword

**a) as starting keyword:**

SEQU ENTER
SEQU becomes the DEFAULT KEYWORD.

SEQU (range list) ENTER

Select devices included in sequences.

Sequence numbers must be in the range of [ 1...999]

SEQU (range list) AT ... (see AT)
Apply values to devices included in sequences.

**b) as target for the following operational commands:**

| | |
|---|---|
| COPY | Copy one sequence to another |
| DELETE | Delete a sequence, also unassignes executors |
| EDIT | Opens edit menu for sequence |

| | |
|---|---|
| IF | Deselect devices which are not part of the sequence. |
| IFOUTPUT | Search for stage output of sequence |
| INVERT | Invert selection of sequence |
| LABEL | Change name of sequence |
| MOVE | Move sequence to another position |

**c) as target for the following executing commands:**

| | |
|---|---|
| ON | "Knock in" all devices contained in sequence. |
| OFF | "Knock out" all devices contained in sequence. |
| PAUSE | PARK all devices contained in sequence. |
| GO | UNPARK all devices contained in sequence. |

## STORE

**Classification** : operational keyword

**STORE (object list) [ENTER]**

All objects in the object list must be of the same type.
If no object is given, a new cue is stored into the default executor.

If the destination of the store command is not empty, you will be asked for confirmation.
In case of storing over existing cues, you will furthermore be asked about the desired store mode. e.g. merge, overwrite or remove.

**If you start storing by pressing the STORE hard key, a temporary window will appear.**
The settings in this window affect the way , the store command is handled.
Defaults for these store options can be found in SETUP / DEFAULTS menu.

## SWOP

**Classification** : executing keyword

**a) As starting keyword**, every executor that follows after SWOP increases the intensity of all programmed dimmer channels to 100% while reducing all other executors to 0% ( as long they are not protected against swop).

**SWOP (executor list) [ENTER]**

**b) As starting keyword** combined with **UNPRESS**, every executor that follows after SWOP reduces the intensity of all programmed dimmer channels to 0% while restoring the intensity of all other executors to 100%

***SWOP (executor list) UNPRESS [ENTER]***

**c) In an assign command**, this function can **NOT** be used. You have to use the Assign menu to define it on an executor´s button.

Note: It is nearly impossible to use this command by typing it into the command line. Use it when it is assigned to a button or as part of a macro!

## SWOP_OFF

**Classification** : executing keyword
Same as **SWOP ... UNPRESS.**

Please look at the **SWOP** command description.

## TEMP

**Classification** : executing keyword

**a) As starting keyword**, every executor that follows after TEMP performs a GO if it wasn´t already running..

TEMP (executor list) [ENTER]

**b) As starting keyword** combined with **UNPRESS**, every executor that follows after TEMP is switched OFF.

TEMP (executor list) UNPRESS [ENTER]

**c) In an assign command**, this function can be assigned to an executor´s button.

**ASSIGN TEMP (executor list) ENTER**

Note: It is nearly impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button or in a Macro! TEMP does not really exist as a function. It is always translated into a pair of GO/OFF commands. You will see that if you record TEMP in a timecode show.

## THRU

**Classification** : helping keyword

**THRU** can only be used within other commands to create ranges.

| | |
|---|---|
| **X THRU Y** | Range from X to Y |
| **X THRU** | Range from X to the end |
| **THRU Y** | Range from the beginning to Y |
| **THRU** | Range from the beginning up to the end. |

The meaning of "beginning" and "end" depend on the context:
**FIXTURE 10 THRU ENTER** will select all fixtures from 10 upwards.

Thru can of course also be used to create ranges of values like

**CHANNEL 1 THRU 10 AT 0 THRU FULL ENTER**
**or**
**CHANNEL 1 THRU 10 AT FULL FADE 1 DELAY 0 THRU 5 ENTER**

## TIMECODE

**Classification** : object keyword

**a) as starting keyword:**

TIMECODE ENTER
TIMECODE becomes the DEFAULT KEYWORD.

TIMECODE (range list) ENTER
Does nothing.
Timecode numbers in the range list must be in the interval [ 1 ... 200].

**b) as target for the following operational keywords:**

| | |
|---|---|
| COPY | Copy one timecode show to another |
| DELETE | Delete a timecode show |
| EDIT | Open edit menu for timecode show |
| INSERT/MOVE | Change visible number of timecode show |
| LABEL | Change name of timecode show |

**c) as target for the following executing commands:**

| | |
|---|---|
| GO | Start playback |
| PAUSE | Pause playback, keep output |
| OFF | Switch off, release output |
| >> | Jump forward to next breakpoint in show |
| << | Jump backwards to last breakpoint in show |

Please look at chapter 7 for details about dealing with timecode.

## TOGGLE

**Classification** : executing keyword

**a) As starting keyword**, every executor that follows after TOGGLE performs a GO if it wasn´t running or an OFF if it was running.

**TOGGLE (executor list) [ENTER]**

**b) In an assign command**, this function can be assigned to an executor´s button.

**ASSIGN TOGGLE (executor list) ENTER**

## TOP

**Classification** : executing keyword

**a) As starting keyword**, every executor that follows after TOP is performing a GOTO FIRST STEP.

**TOP (executor list) [ENTER]**

**b) In an assign command**, this function can be assigned to an executor´s button.

**ASSIGN TOP (executor list) ENTER**

## TOUCH_BTN

**Classification** : object keyword

A TOUCH_BTN (touch button) is a remote function triggert by incoming 0-10V signals.
The TOUCH_BTN simulates an executor keypress, therefore it is working only in combination with an assigned executor. TOUCH_BTNs can be seen under TOOLS / REMOTE TOUCH menu.

Calling a TOUCH_BTN manually:
**TOUCH_BTN X ENTER**

**Linking a TOUCH_BTN to an executor:**
**STORE TOUCH_BTN X EXEC/FADEREBUTTON1/2/3 Y.Z ENTER**
Using EXEC in this command will always link the remote to the middle executor button.

X must be in the range from 1 to 16.

## UNPRESS

**Classification** : helping keyword

UNPRESS is used only in combination with functions of executor´s buttons that cause an action upon unpress.
These functions are FLASH_UP,FLASH_DOWN,SWOP,and TEMP.
Please look at these commands for details about UNPRESS.

## UPDATE

**Classification** : operational keyword

UPDATE does the following things, sorted by priority:

a) If the UPDATE dialog is open, it closes the UPDATE dialog.

b) If the EDIT / UPDATE procedure is active, the edited object is updated, and EDIT / UPDATE procedure is finished.

c) It loads the UPDATE dialog , where you can update changed PRESETS and CUES.

## VALUE

**Classification** : immediate keyword

VALUE has no other meaning than switching back to value mode if desk is in a time mode such as FADE or DELAY.

## VIEW

**Classification** : object keyword

**a) as starting keyword, given views will be called.**

VIEW (range list) ENTER

View numbers in the range list must be in the interval [ 1 ... 999].

**b) as target for the following commands:**

| | |
|---|---|
| ASSIGN | A view can be assigned to a VIEWBTN |
| COPY | Copy one view to another |
| DELETE | Delete a view |
| INSERT/MOVE | Change visible number of view |
| STORE | Store a view. You will be asked for the screens that should be contained in the view. |

**Views can store and restore the window arrangement on the screens of your desk.**

- A View can contain one screen or multiple screens.
- Views that contain single screens can be called back also on other screens.
- Views that contain multiple screens will be called back on the original screens.
- Views that contain single screens from external monitors can not be called back on the build in system screens ( because of higher resolution).
- Views which are called by the command line ( and not by the push of a VIEWBTN) are called back on the original screens.

## VIEWBTN

**Classification** : object keyword

**a) as starting keyword, given view buttons will be called.**

**VIEWBTN (range list) ENTER**

Viewbutton numbers in the range list must be in the interval [ 1..30 ]

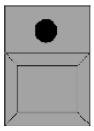
Each screen has 6 view buttons. 3 build in and 2 external monitors make a total of 30 view buttons.

**b) as target for the following commands:**

| | |
|---|---|
| ASSIGN | Assign a view or a macro to a view button. Syntax is:<br>ASSIGN VIEW X VIEWBTN Y ENTER<br>ASSIGN MACRO X VIEWBTN Y ENTER |
| COPY | Copy one view button to another |
| DELETE | Delete (Empty) a view button. |
| MOVE | Move one view button to another |
| STORE | STORE a view and assign it to the view button. |

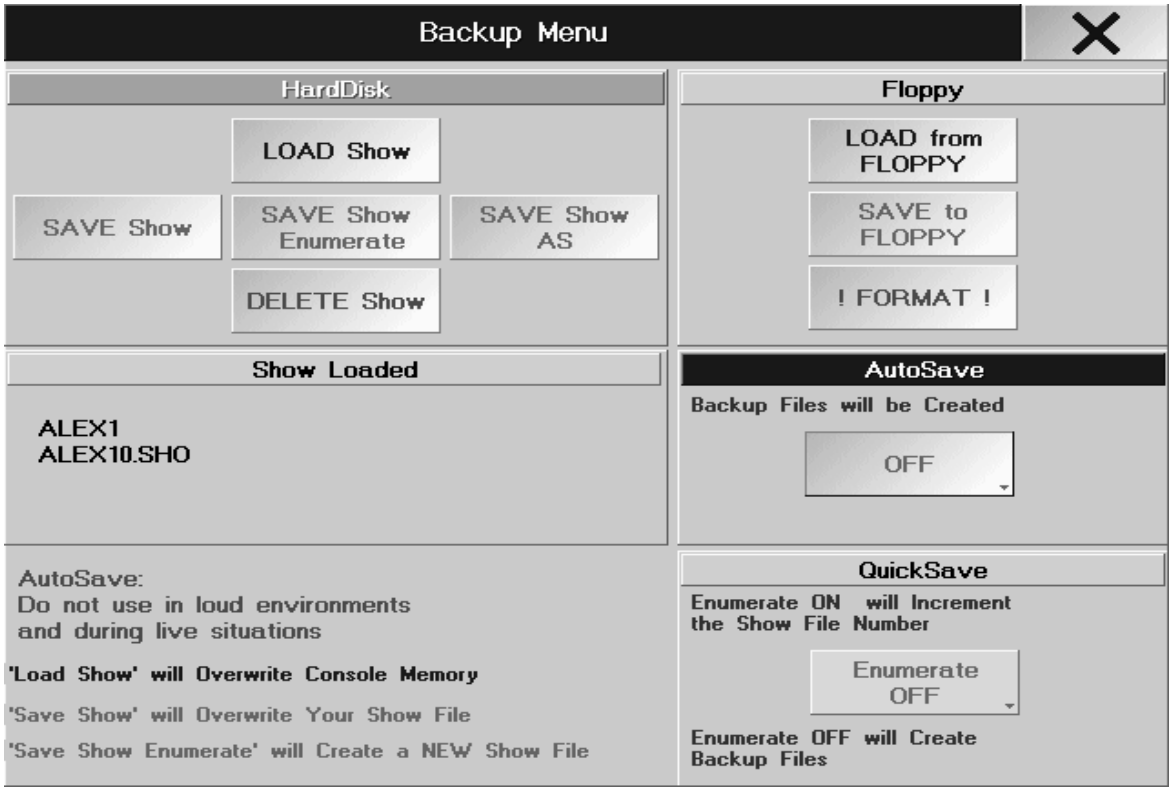
# 10 Saving and Loading a Show

BACKUP



By pressing the BACKUP key, you will open the Backup menu.

Pressing the BACKUP key twice in quick sucession will save the Show to disk quickly. If the **Enumerate** button is OFF, the Show will be saved and an additional backup be created. If it is "ON", each time, a ***new*** Show will be created having a consecutive number.




The processes of saving and loading shows is being organized in the BACKUP menu. The current SHOW (currently loaded Show) can be named and saved on the internal harddisk or on to floppy disk.

With the AUTOSAVE key, you can set an automatic save according to the time displayed on the key. Avoid using this during a live Show or in very loud environments.

When using the AUTOSAVE function a BACKUP of the Show will be made with each saving operation (max. 10). These backups can be used to restore previously saved Shows. You can display these backups using the SHOW BACKUP key.

## 10.1 Saving the Current Show on the internal harddisk

Press the **SAVE Show As** button. Name the show using the keyboard and confirm with Enter. This will save the Show.

By pressing the **SAVE Show** button, you can save the Show immediately while keeping the current name. By pressing the **SAVE Show Enumerate** button, you can save the Show immediately, plus a consecutive number will be added to the current name.

## 10.2 Loading a Show from the internal harddisk

Press the **LOAD Show** button. Press on the desired SHOW in the list. This will load the Show.

The PLEASE CONFIRM window with the following options will open:

| | |
|---|---|
| YES | To save the current Show before loading the new one. |
| NO | To load the new Show without saving the current one. |
| CANCEL | To abort this process. |

The show will be loaded.

## 10.3 Loading an Empty Show

To create a completely new Show, first press the ***Load Show*** key and enter a name that had not been used for any other Shows; confirm with Enter. The ***Please Confirm*** window will open.

Pressing the YES key will save the current Show.
Pressing the NO key will discard the current Show.

The show will be loaded.

Additionally, you can save an „empty“ Show to hard disk or floppy so that you can use it later when needed. This way, you can also transfer demo shows, standard settings, etc. to others.

## 10.4 Deleting the Current Show

The currently loaded Show cannot be deleted! In order to delete the currently loaded Show, you have to load another Show first.

## 10.5 Deleting a Show from the internal harddisk

Press the **DELETE Show** button. In the list, click on the Show that is to be deleted; the Show will be deleted immediately.
If you press the **Stay** button, before deleting a Show, the Delete menu will not close automatically.

The hard disk has a capacity of at least 2,000 Megabytes so you can save a lot of Shows to the ***grandMA's*** hard disk.

## 10.6 Saving the Current Show on floppy disk

All data necessary for the SHOW can be saved on to floppy disk (even all Fixtures to be used in the show and all users with all settings for this show). Thus, you can transfer the whole show to another ***grandMA*** console or for archive storage.

The current Show will be saved including its name.

Continue by touch on the SAVE FLOPPY key. The SAVING ACTSHOW/COPYING ACTSHOW window will appear. After just a few seconds, the SAVING COMPRESSED SHOW window will open.

Insert an empty IBM/PC formatted 3,5“ disk and remove the write protection (small tongue on the disk must be **closed**). Now press the OK key.

The show will be saved after the window has closed. This procedure might take a few minutes.

Remove the disk from the drive afterwards.

**Please make sure to frequently save the current show on harddisk during the programming procedure. A good idea is to change the name of your show on a regular basis so that you can go back to previous days programing. A back-up on floppy disk is always a good idea.**

## 10.7 Loading a Show from floppy disk

Press the LOAD FLOPPY key. The window LOADING COMPRESSED SHOW will open. Insert the disk containing the show. Now press the OK key (might take a few minutes).

The show will be loaded.

Remove the disk from the drive afterwards, as otherwise the console would not be able to boot after a restart.

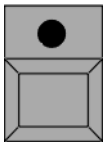
**Attention! Only shows created with operating software 3.2 or higher can be used!**

# 11 Software Update

You can only download the update from our HOMEPAGE (www.malighting.de) using an IBM compatible PC. After the download execute the file. It is a self extracting archive. You will be asked to insert some empty floppy disks into drive A: , press OK and your update disks will be created.

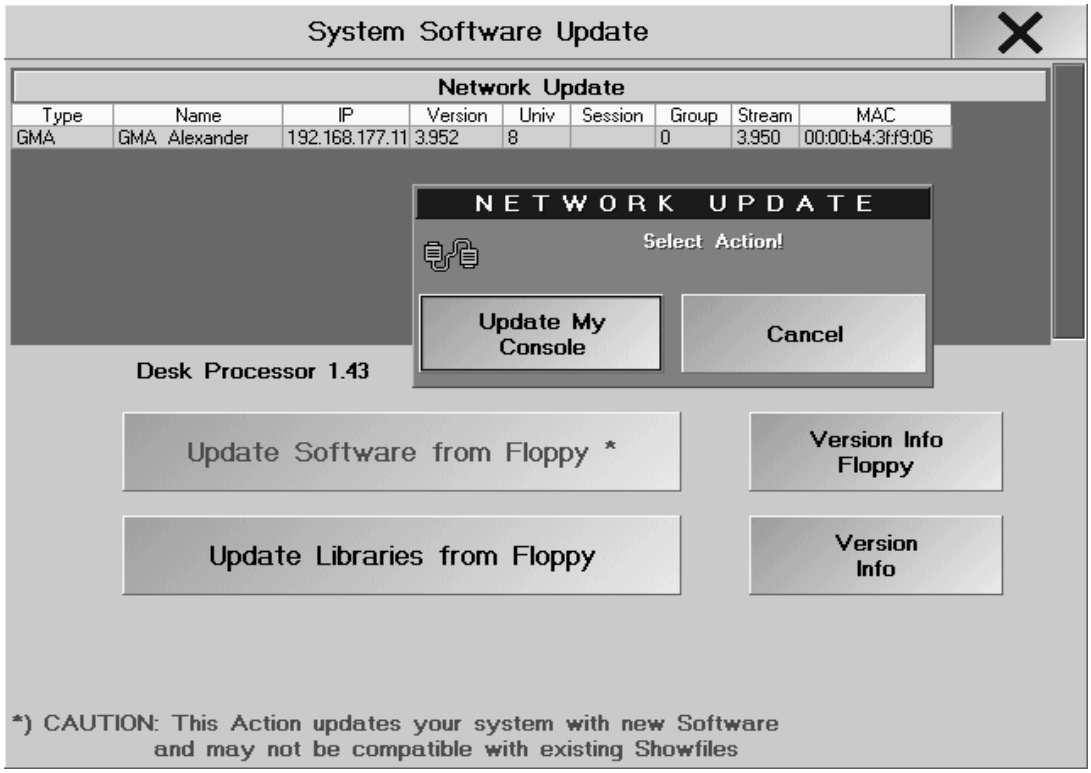
With these disks go to your ***grandMA*** console:

**SETUP** Open the SETUP menu with the SETUP key.



Open the UPDATE menu by pressing the UPDATE SOFTWARE key. If this is not possible (e.g. an update had not been completed correctly), you can open the menu with the F4 key.

**Do not update the *grandMA* right before running a show!**
**Updating the software is a serious thing. MA Lighting can not always guarantee that your old show will play back correctly after an update !**




**Insert the disk labelled "Last Disk" and push the soft key "Version Info Floppy". Information about the software update will appear on screen**

To update the ***grandMA*** software, insert the current UPDATE disk labeled "LAST DISK" and press the key "Update Software from Floppy".
The software update includes the "main program", "subprocessor firmware" and the "fixture library". ➡ **2.5 Modifying Fixtures Types**

**Before changing disks, make sure the green LED on the floppy disk drive is off.**

Please be patient, as the update procedure can take up to 10 minutes. After updating , it is possible to do a reset.

By pressing the soft key "VERSION INFO" you can read about new functionality and fixed bugs of the latest update.

To renew the Fixtures Library, insert the optional available FIXTURE UPDATE floppy and press the "Update Fixture Library from Floppy" button. This may last a few minutes. After processing the note „Fixture Library Update done" appears.

Additionally here is a possiblity to import older fixtures made with version 3.2/.3.3.

## Updating over a Network

This function is only interesting for users owning/using more than one ***grandMA***.

***Please proceed with the uttermost care! This is something you can easily screw up. This operation should only be carried out by expert grandMA users.***

***Also for this updating a propper working and not overloaded network must be available.***

***Make sure to finish ervery Session with other desks before updating! If a Session is still running this may destroy data files on the harddrive!***

***grandMA, grandMA-Light, grandMA Ultra-Light, and grandMA Replay-Unit*** can be cross-updated.

***The grandMA Offline editor cannot be used in this case!***

If multiple consoles are connected via Ethernet, and there is a different software version on the other consoles, these consoles will be displayed in the upper part of the window (table). The table will display type, name, IP address, software version and other information.

It is only possible to update the software, if the first three digits of the ***grandMA's*** IP address are identical (e.g.: 192.168.0.**x**). ➡ **14** TCP/IP configuration

Select a console in the table and press the Encoder. Pressing the button will open the Network Update window.

Update **My** Console will transfer the software verson of the other console to this one (my desk). After updating, this console (my desk) will automatically start with the new software.

***If you update more than one console, please do this only one by one and make sure they are operating fine after reset.***

# 12 Utility Menu

You will need this menu, if the main program or the actual show is damaged due to a crash or some other error. For the ***grandMA*** light and ultra-light you ***MUST*** have an external keyboard.

In the Utility Menu, you can load or delete an old ***grandMA*** operating system. You can also delete shows here. You can delete the current show (this show is automatically loaded upon power-up of the console). You can renew the Firmware for the second built-in Computer (Motorola) and you can also renew the ***grandMA*** operating system via floppy disk.

During the Boot-up process you will see all loaded program segments (blue background) on the right TFT display. In order to access the Utility Menu you have to push any key as soon as the message :
**??? TO ENTER UTILITY MENU PRESS ANY KEY ???** is displayed with red background during the boot-up process. The menu will open after approx. 10-20 seconds.

Press 1: Restore ***grandMA*** operating system

If you press the „1“ key on the keyboard, you will see a list with all systems existing on the harddisk. By pressing one of the displayed keys (a, b, c...) the respective system will be installed. You have to confirm installation by pressing “o“. **VERY IMPORTANT - this is the letter “o“, not the number “0“** .As soon as the installation is completed, the display will show UPDATE DONE next to STATUS. You can start the console by pressing the “ESC“ key twice.

Press 2: Delete ***grandMA*** operating system

Upon every update, a safety copy of the system will be automatically created on harddisk. In order to delete an older system from harddisk, press „2“ on the keyboard. You will see a list with all systems existing on the harddisk. By pressing one of the displayed keys (a, b, c...) the respective system will be deleted. You have to confirm the delete process by pressing “o“. **VERY IMPORTANT - this is the letter “o“ not the number “0“.** After deletion is completed, the display will show DELETE DONE next to STATUS. You can start the console by pressing the “ESC“ key two times.

Press 3: Delete (old) ***grandMA*** shows, to cleanup the harddrive

Upon every update, a new folder for the shows will automatically be created on the harddisk. During every update, the console will save all old shows, converted to suite the new system software, in the youngest folder. From the time of the update, all new created shows will be automatically saved in this folder, too.
In order to delete shows from an older system version from the harddisk, press „3“ on the keyboard. You will see a list with all shows in all system versions existing on this harddisk. By pressing one of the displayed keys (a, b, c...) the respective shows will be deleted. You have to confirm the delete process by pressing “o“. **VERY IMPORTANT - this is the letter “o“ not the number “0“.** After deletion is completed, the display will show DELETE DONE next to STATUS. You can start the console by pressing the “ESC“ key twice.

Press 4: Delete current show

If you press „4“ on the keyboard, the current show (this show will be automatically loaded upon power-up of the console) will be deleted. You have to confirm the delete process by pressing “o“. **VERY IMPORTANT - this is the letter “o“ not the number “0“.** After the deletion is completed, the display will show DELETE DONE next to STATUS. You can start the console by pressing the “ESC“ key twice.

Press 5: Update firmware with display

If you press „5“ on the keyboard, you can renew the Firmware for the second built-in Computer (Motorola). In order to update the software: insert the current update disk labeled „LAST DISK“. You have to confirm the update process by pressing “o“. **VERY IMPORTANT - this is the letter “o“ not the number “0“.** As soon as the update is completed, the display will show UPDATE DONE next to STATUS. You can start the console by pressing the “ESC“ key twice.

Press 6: Update ***grandMA***

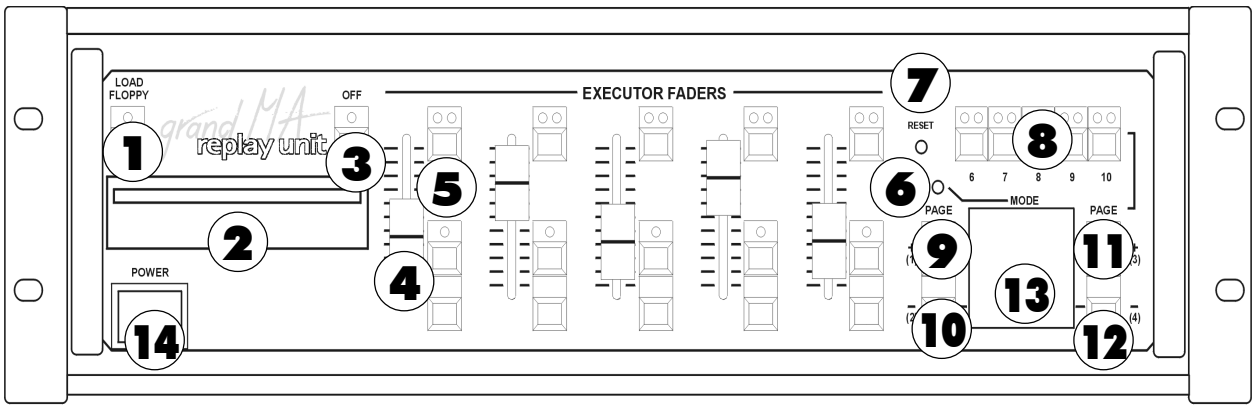
In order to update the software: insert the current update disk labeled „LAST DISK“. You have to confirm the update process by pressing “o“. Shortly after, you will be asked for “DISK 1“. Now insert this disk and confirm by pressing “o“.**VERY IMPORTANT - this is the letter “o“ not the number “0“.** The disk will be read (might take a little while). Following that, you will be asked for „DISK 2“. Insert disk 2 and confirm again with “o“. **VERY IMPORTANT - this is the letter “o“ not the number “0“** (this will take a little longer now). As soon as the update process is completed, the display shows UPDATE DONE, PLEASE REBOOT next to STATUS. Now please reboot the console by using the combination CTRL-ALT-DEL or the RESET key on the rear of the console.

# 13 Layout and Controls *grandMA* replay unit

## 13.1 Introduction

The ***grandMA*** Replay Unit is a small rack mount controller unit that performs nearly all of the functions of the Award winning ***grandMA*** console. At 19” x 17” x 5”, it requires a very little space, while offering 100% compatibility with the larger consoles.

The ***grandMA*** Replay Unit is designed to perform as a stand-alone show controller on exhibitions, in theme parks or other venues. In conjunction with one of the ***grandMA*** consoles, it also becomes a very powerful backup system capable of running an entire show in full tracking backup mode despite its reduced hardware.




### 1 Floppy Key

Quick and easy loading of a show from floppy disk. This key complies with the following steps on the ***grandMA***: “Backup-Load Floppy”. If monitor and mouse are connected, you can follow the instructions in chapter ➠ **10.1** Saving or loading a SHOW. Without these, you would proceed as follows: Confirm, if you wish to save the actual show on the internal harddisk in advance by pressing the page keys / key no. 1 to 3.
Key no. 1: Save actual show on harddisk before loading show from floppy.
Key no. 2: Do not save on harddisk before loading show from floppy.
Key no. 3: Cancels the actual load task.
Without a floppy disk inserted, you will get an error message on the display. Confirm with key no. 1.
This procedure is also valid for many other “Pop Up menus” of the ***grandMA***.

### 2 Floppy Drive

The floppy drive will take all 3.5” 1.44MB HD disks and will serve to save shows or single fixtures from the library.

### 3 Off Key

The “Off Key” has the same function as the “Off Key” on the ***grandMA***. Together with the Executor Buttons or the appearing menu on the monitor, you can switch off active executors. You can switch off the executor by simultaneously pressing the “Off Key” and the respective “Executor Button”. ➠ ***5.6*** OFF menu

### 4 Executor Fader

There are 5 Executor Faders available. These five faders correspond to the faders no. 1 to 5 on the ***grandMA***. Faders no. 6 to 20 (Faders 6 to 10 on the ***grandMA*** light) are not available. This becomes especially important when programming the show on the ***grandMA*** and “running” the show afterwards with the Replay Unit. These faders are not motorized, so that the actual values have to be “grabbed” after switching pages. If the faders are not located at the actual value, the respective LEDs within the buttons will flash, until the value has been reached by moving the fader. Channel faders are not available.

### 5 Executor Fader Button

Three Executor Buttons are available for each Executor Fader (as on the ***grandMA***). These 15 Executor Fader Buttons correspond with the Fader Buttons no. 1 to 5 on the ***grandMA***. Fader Button no. 6 to 20 (Fader Button no. 6 to 10 on the ***grandMA*** light) are not available. This becomes particularly important when programming the show on the ***grandMA*** and “running” the show afterwards on the Replay Unit.

### 6 Mode Key

Has no function yet. This key is being reserved for possible special functions in the future.

### 7 Reset Key

This key stands for a “hard” reset. This key is only required in the unlikley event of the console freezing or crashing. The same key is located once again on the rear panel. ➠ **1.8.1 Basics**

## 8 Executor Buttons

There are 5 Executor Buttons (no. 6 to 10) available (as on the ***grandMA***). These buttons correspond with the Executor Buttons no. 21 to 25 on the ***grandMA***. Buttons no. 26 to 40 (no. 16 to 20 on the ***grandMA*** light) are not available. This becomes particularly important when programming the show on the ***grandMA*** and "running" the show afterwards on the Replay Unit.

## 9 Executor Fader Page Up / Key no. 1

This key has 2 functions.
Switching pages for the Executor Faders (Page up)
Confirm key no. 1 (the respective command appears as running text on the display)

## 10 Executor Fader Page Down / Key no. 2

This key has 2 functions.
Switching pages for the Executor Faders (Page down)
Confirm key no. 2 (the respective command appears as running text on the display)

## 11 Executor Key Page Up / Key no. 3

This key has 2 functions.
Switching pages for the Executor Keys (Page up)
Confirm key no. 3 (the respective command appears as running text on the display)

## 12 Executor Key Page Down / Key no. 4

This key has 2 functions.
Switching pages for the Executor Keys (Page down)
Confirm key no. 4 (the respective command appears as running text on the display)

## 13 Display

Pop-up messages will appear on the display of the TFT monitor, which have to be confirmed (as on the ***grandMA***).
NOTE: If these messages are not being respectively confirmed, you might not be able to continue in the process. If monitor and mouse are connected, you can also confirm the messages with these tools.

## 14 Power Supply

➡ **1.5.5 Battery**

## 13.2 General Instructions

### 13.2.1 Differences between Replay Unit and the *grandMA* or *grandMA* light

The Software is identical for all of the units. However tow 1 external monitor can be connected. The UPS Functions as well as the 2048/4096 channels are also fully supported as on the ***grandMA*** or ***grandMA*** light.

Connectors for external keyboard, mouse and monitor are located on the rear of the unit (these are not included as standard).

Encoder, Trackerball, Wheel, more than 5 Executor Faders and 5 Executor Buttons as well as quite a few other keys on the ***grandMA*** and ***grandMA*** light are not available with this unit. Nevertheless most of the functions (except for the executors) can be reached and activated using the mouse and tow external monitor.

### 13.2.2 Working with Mouse, Keyboard and Monitor

With these tools almost all functions of the ***grandMA*** can be operated on this unit. The 3 keys of the mouse will take on the functions of the keys on the console. All required keys (such as CUE, COPY, NEXT, a.s.o.) have to be set up as "Quikeys" in advance (➡ **8.2** Assigning and Activating QUIKEYS), so that they can be operated via the mouse. Values within the fixture or channel sheets can be modified with the middle mouse key. A Command Field will appear on the monitor when clicking on those fields above the (non-existing) encoders. You can operate this Command Field with the mouse also.

### 13.2.3 Working in Stand Alone Mode (Playback)

This means working with the Replay Unit without the use of external mouse, keyboard and monitor. In this mode you can only activate Playback via the existing elements on the front of the unit. Please note, that you will only have 5 Executor Faders and 5 Executor Buttons available. These Executors correspond with the first 5 Executors on the ***grandMA*** and ***grandMA*** light. There is no access to any of the other Executors. This becomes particularly important when programming the show on the ***grandMA*** but "running" the show afterwards on the Replay Unit.

# 13.3 Specification and Technical Data

## 13.3.1 Integrated Harddisk and Diskdrive

The harddisk does not only save a backup for the operating system, but leaves enough space for countless shows with hundreds of sequences. Shows can also be saved on disk for archive purposes or transfering to other ***grandMA*** consoles. The floppy disk drive also allows you to update the software, which can be downloaded from the MA Homepage (www.malighting.de) on the internet.

## 13.3.2 Ethernet and other Options

In addition to the 4 DMX output ports the hardware of the ***grandMA*** replay unit is designed to transmit larger numbers of channels via Ethernet. ESTA is currently working on a standard protocol for this form of transmission, which will guarantee a compatibility between units of different manufacturers, similar to the DMX norm. In addition to DMX input, Sound, SMPTE timecode, it offers a printer port and a RS232 interface for faster communication with any kinds of peripheral units.

## 13.3.3 System Maintenance and Software Updates

The software of the ***grandMA*** family is in a process of constant expansion and improvement. Due to the control via menus and display softkeys it is possible to realise the feedback of our customers and technical advances in our software updates. The hardware is only the basis and offers sufficient capacity to guarantee that its owner will always participate in the fascinating technical developments.

## 13.3.4 Peripherals

Peripheral units, such as a wireless remote control, are still in the development process. A 3D visualisation software is available.

## 13.3.5 Capacity:

- ***grandMA*** replay unit controls 2048 channels, 4096 channels as option via ethernet (dimmers and attributes of 8 or 16 bit) with softpatch to 4096 DMX addresses.
- A freely configurable monitor offers flexible operation and precise adaptation to any individual working mode.
- Playback works on the basis of dipless crossfade either in Tracking or Non-Tracking mode.
- The internal harddisk allows for virtually unlimited storage capacity of presets, memories, cues and effects.

### 13.3.6 Front Panel Layout

- 5 Faders as Executor-, Effect or Group-Faders, each with 3 directly assigned buttons.
- 5 Executor Buttons for direct retrieval of Sequences, Chases and other functions.

### 13.3.7 Setup Menu and Start Configuration

- Basic configuration available on harddisk.
- Fixture library with more than 280 multifunctional fixtures.
- All fixtures and channels can be named individually.
- Free Softpatch with MIN, MAX and INVERT of all four DMX lines.
- Definition of new fixture types on screen.

### 13.3.8 Display of output and data entry

- Numeric dimmer channel listing.
- Channel fader symbols.
- Fixture parameter spreadsheets for status report on moving lights and dimmers.
- Different additional options available.

### 13.3.9 Selection and Data Input

- Selection via Group Keys with Mouse.
- Hold and Move Mode with middle mouse key.
- Align option for proportional change of any group of values.
- Preset softkeys for the moving light features.
- Keys can be freely moved within the window.
- Presets grouped together for the 10 different function types.
- Keys of different preset groups with different colours.
- Free assignment of channels to be controlled in which preset.
- Direct access even during Playback.

### 13.3.10 Automatic effect generator

- A number of complex effects applicable to any channel.
- Library of all different movements.

### 13.3.11 Store Options

- Single cues, chase effects, sequences or effects.
- Selective programming for LTP and tracking mode.
- Basic fade times for fading channels and basic delay for switching parameters.
- Optional individual fade and delay for every single channel.
- Overwrite, Merge, Insert and Add-on option.
- Cue Lists in Tracking or Non-Tracking Mode.
- Optionally insert in Cue Only Mode.

### 13.3.12 Playback Options

- Free assignment between Program Pool and Playback faders or Playback buttons.
- Playback via fader or GO-button with stored timings.
- Chaser effects with Auto Run, Audio or manual X-Fade.
- Auto Loop / Single / Reverse / Bounce / Random.
- Sequence with individual timings per step.
- Go button mode / Auto Timed / Sound.
- Steps can include loops with counter or timer.

### 13.3.13 Executor Faders and Buttons

- Executor faders and buttons with multiple assignment options.
- Working mode of faders and buttons can be freely assigned.
- Optionally assignment of several executors for one single cue list.
- A block of special function buttons can be applied to any executor.

### 13.3.14 Fader working modes

- Brightness Master in HTP or LTP Mode.
- Manual X-Fade.
- Speed, Fade Time, Rate for chaser and sequences.

### 13.3.15 Button working modes

- ON/OFF, GO+, GO-, Pause, Flash up and Flash down.
- Fast GO and GO- (<<< and >>>) without fades.

### 13.3.16 Output Listings and Cuelist Protocols

- Infading or outfading values of main sequence is marked in different colours in the channel list.
- Lists of sequences including names of steps and times.
- Parameter modifications directly in the spreadsheet.

### 13.3.17 Overwriting a program sequence

- Constant access to all effects and channels.
- CLEAR and RELEASE functions.
- UPDATE function for fast correction of programs.
- EDIT function for direct modification of playback parameters.

### 13.3.18 Adjustment of Hardware

- Software Equalizer for Audio Input.
- Preselection of certain settings (Defaults).
- Free grouping of functions for selective programming.
- Preselection of save mode, times and the standard operation of playback functions.

### 13.3.19 Connectivity

- 4 DMX 512/1990 Output Lines via 5-pin XLR Sockets.
- DMX Input with 5-pin XLR Socket and DMX Thru.
- Audio Input Line for Mono Audio Signals >20 mV with 6,3mm socket.
- SMPTE Timecode Entry for LTC Timecode >200 mV with 6,3mm socket.
- MIDI Interface with IN/OUT/THRU.
- External control input for direct voltage signals via 25-pin SUB D socket.
- 2 SVGA Output Lines for one colour monitor and a service monitor via 15-pin sockets.
- Parallel printer port Centronic via 25-pin SUB-D socket.
- Ethernet Interface for networking (Backup), DMX-transmission and Remote Control with RJ45-socket (10Base-T) according IEEE 802.4.
- 2 serial interfaces RS-232C for future extensions (9-pin SUB-D sockets).
- Connections for external Keyboard (Mini-D, PS2-Type) and Mouse (Mini-D, PS2-Type).
- Power Supply via IEC/CEE 22 Inlet Mains Supply Plug (90 – 230V autoselecting).

### 13.3.20 Operating system

- Operating system for industrial applications named VXWORKS (no DOS, no WINDOWS).
- Fast cold boot time (less than 60 sec).
- Software update via download from Internet.
- Off-Line Editor available.

### 13.3.21 Hardware

- Pentium Processor with min. 450 MHz Processor Speed and 128 MByte RAM.
- 12 MByte non-volatile Flash Disk for Operating System, System Software and Installation Data.
- Built-in Hard Disk for Show Data, Library, etc..
- Integrated 3.5" Floppy Drive for easy software updating and external storage of Show Data.
- Reset Keys on front and rear housing.
- Built-in UPS (Un-interruptable Power Supply) to withstand main power failures up to 10 minutes.
- Professional protection against electromagnetic interference in compliance with all relevant European EMC regulations.

### 13.3.22 Weight and Dimensions

- Robust Steel Housing (485 x 430 x 130 mm).
- Weight: 24,25 lb. (11 kg)

# 14. Potentialities of Network connections

In the ***grandMA*** family, there are multiple networking possibilities. In the following description, we will use the abbreviation ***grandMA*** or "unit" for any ***grandMA***, ***grandMA*** light, ***grandMA*** ultra-light, ***grandMA*** RPU, ***grandMA***-Offline, and ***grandMA*** 3D, as they are all equipped with the same software options and only differ in their hardware (Offline and 3D, however, cannot create any DMX). The PDA remote control is ***not*** a unit in the above sense, and will not be explained.

## Application options:

***grandMA*** plus ***grandMA 3D (PC):*** For visualization purposes on a PC

***2 grandMAs*** connected: Backup system or Single user

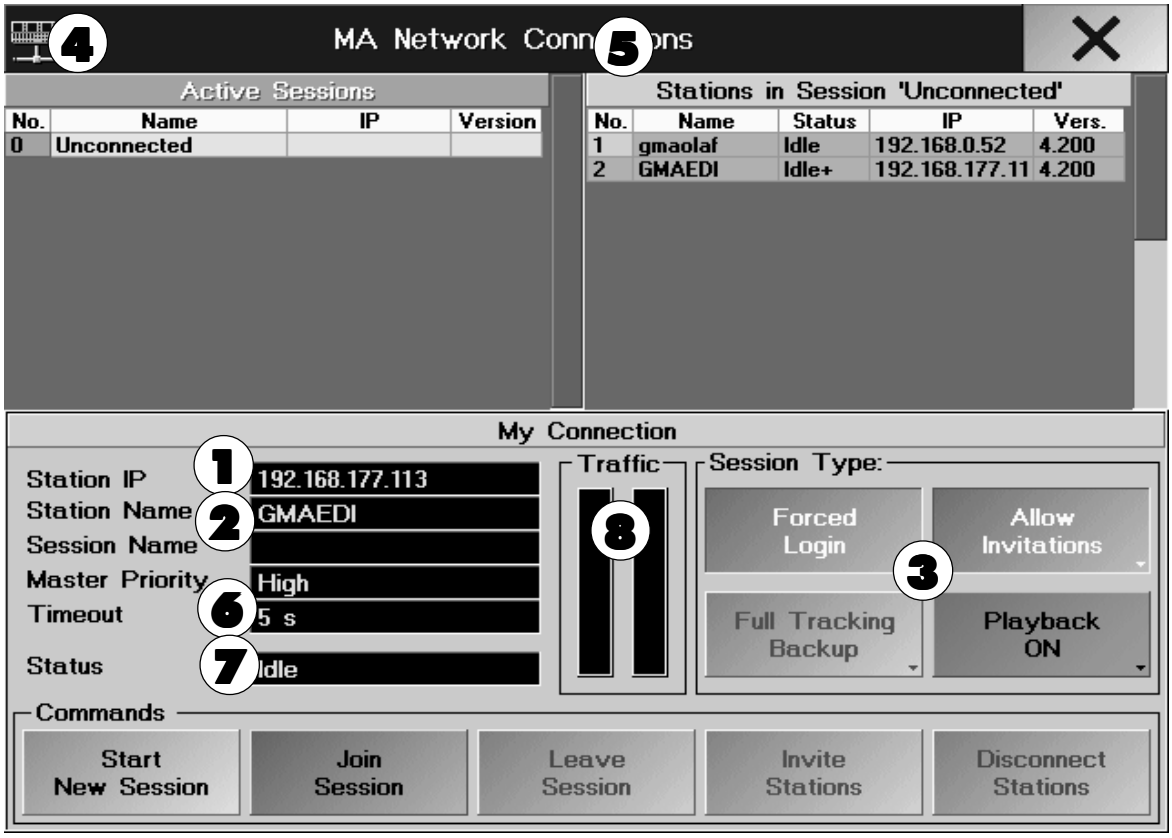
***grandMAs*** connected: Multi User system

***grandMAs*** connected: Playback system, e.g.: as channel expansion

## 14.1 Preparing the network settings:

Open the TOOLS menu using the appropriate function key "TOOLS".

Pressing the **MA Network Configuration** button in the TOOLS menu will open this menu.




### Setting the IP address:

**1** This is where the current IP address will be displayed.

**Attention:** Before changing the IP address, save your Show. ➡ **10** Saving and loading a SHOW

The change it, just click on the IP address; this will open a window containing the current IP address that can be changed directly. This IP address cannot be used on different consoles within the network. Simply alter the individual IP address of each unit to unique numbers within your network. Make sure that the first three number blocks (in this case: 192, 168, and 0) are identical for all units. By pressing the **Save and Reboot** button, the new address will be saved and the console be restarted.

### Defining the Console name

**2** This is where the name of the console is displayed. This name will be displayed on each unit in the network and will facilitate the assignment of individual units in larger networks. To change, just click on the name, overwrite it in the window that will open, and confirm.

## 14.2 Preparing a Session

**3** Pressing on one of the four buttons displayed will change their functions accordingly.

Full Tracking: Preset for a Backup system or Single-User.

Multi User: Preset for Multi User systems.

Allow Invitations: Another unit/user can control this unit during a session.

Reject Invitations: Another unit/user ***cannot*** control this unit during a session (network connection).

Forced Login: If another unit/user wants to log into a **session** of this unit/user, the user of the other unit/user has to log in entering his name and password.

No Login Required: This will allow another user to log into a **session** of this unit.

Playback Off /On: Preset for a Playback connection (only transferring Playback data, the data bases of the are **not** identical).

If you want to connect the 3D - Visualizer with this desk, Playback OFF must be selected.

**4** The left table will show all **sessions** stating its names and the "Unconnected" group (all not connected consoles). If a session is displayed with a red background, you can only log into this session using a password (join) ➡ above item 3: Forced Login. When clicking on a session (blue background), the units of this selected session will be displayed in the right table. ➡ item **5**

**5** The right table will only show the units of the selected session (also ***grandMA***-Offline and ***grandMA*** 3D). If a unit is displayed with a red background, it is not enabled for network connections. ➡ above, item: Allow Invitations.

**6** The Master priority will only interest you, when you want to create sessions with more than 3 units. By clicking into the cell (here Normal), you can switch between Low, Normal or High. The unit with the highest priority will always have the Master function in a session.

**7** This is where the current status will be displayed: Master, Slave or Idle.

**8** This is where the current data traffic will be displayed.

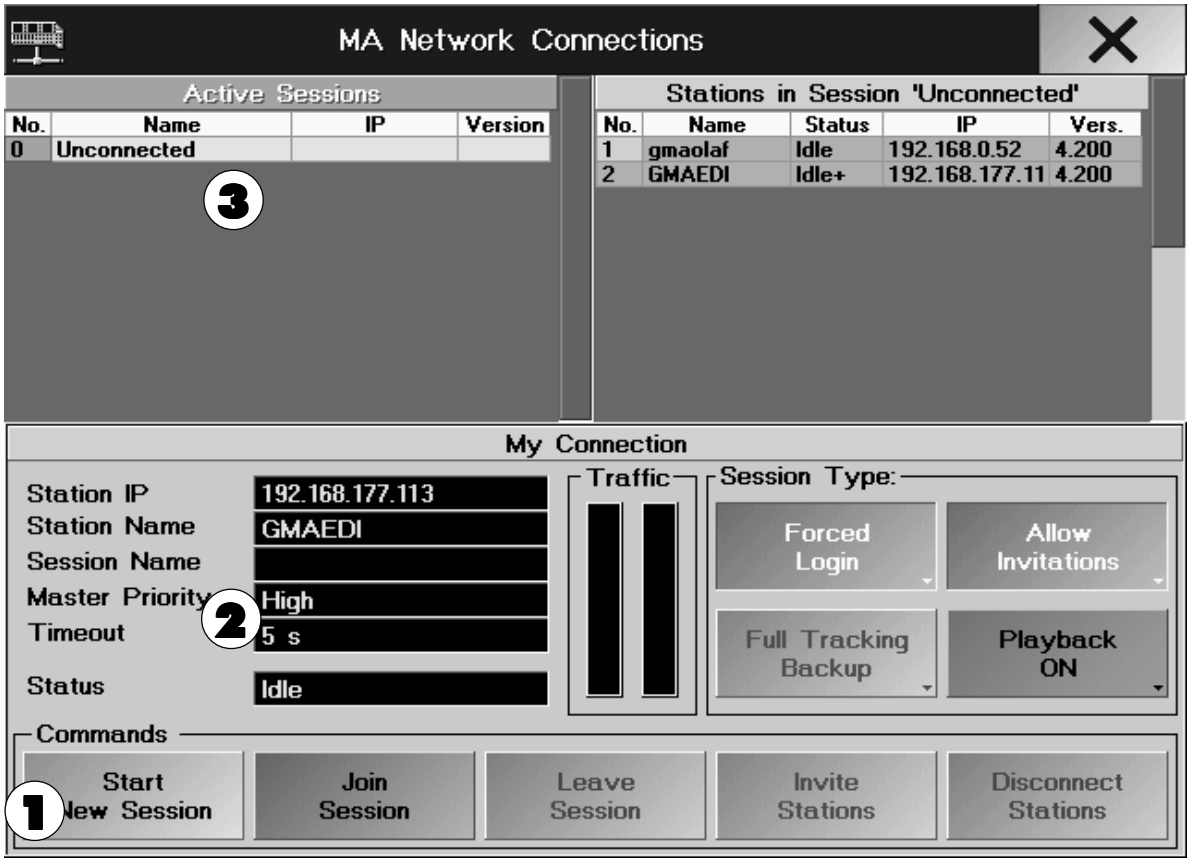
## 14.3 Creating a Session

- **Before you start a Session, make sure that the appriate settings from chapter 14.2 have been made.**
- **Connections always have to be made when starting a Session.**
- **Only now canthe different units (3D, Offline, grandMAs,...) be integrated in this Session**

**1** After all settings are made, press the **Start New Session** button and confirm with **OK**. The name of the unit will automatically be accepted as Session name.

**or:**

**2** If you want to assign a name to the Session, click into the empty cell on the side of "Session Name", enter a name and confirm. Then press the **Start New Session** button and confirm with **OK**.



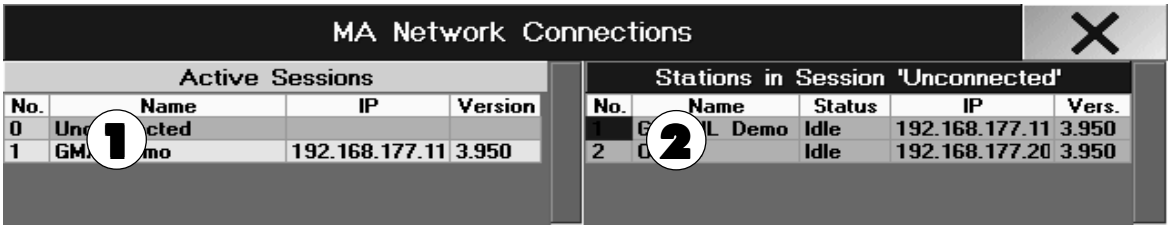

**3** In the left table, the created Session will be displayed with its name and on a light green background. This unit will now be the ***only*** Master in this Session. Now, you **must** integrate **another** unit into this Session.

### 14.3.1 Expanding the Session

Before units can cooperate with each other, you have to integrate the second one (or further units, theoretically up to 10 units) into this Session.

- **The Show of the second unit (and of all others) must be saved before, as these**
- **even on the 3D - will always be overwritten by the first unit (that had created the Session).**
- **All users that are not present on the first unit (that had created the Session) will be deleted. If needed, you would have to set them up again.**
- **Master priorities have to be defined (see on the right side)**

## Attaching Units from the Master



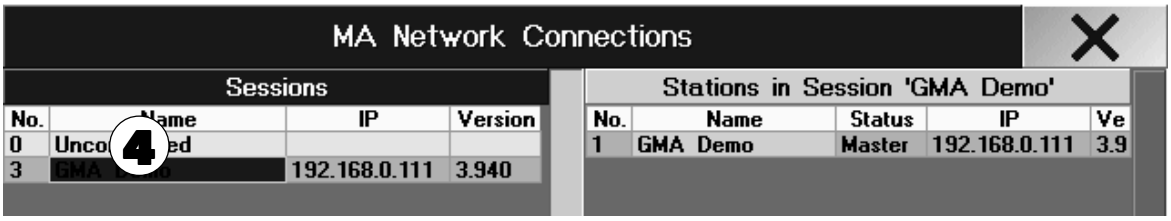
**1** In the left table, click on „Unconnected". The table on the right will show all units that are the „free".

**2** In the right table, click on the unit (3D, Offline, ***grandMA***, ..) (will get a blue background).

**3** Press the **Invite Stations** button and confirm with **OK**. The data of the „invited" unit will be overwritten!

## Attaching from another Unit

**4** In the left table, click on the Session, which is to be joined.



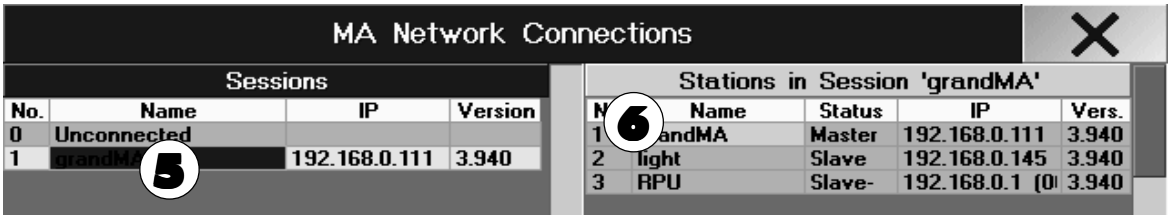

Press the **Join Session** button and confirm with **OK**. The own Show data will be overwritten now!

## Master Priorities

**All units of the same priority:** The unit that had created the Session, remains the Master. If the Masters fails, the Slave (2nd unit) will automatically become the Master. When there are more than 2 consoles, coincidence will decide, so you should assign priorities.

**If there are more the 2 unit:** e.g.: 1st unit ***grandMA*** (priority "Normal"), 2nd unit ***grandMA*** light (priority "Normal"), 3rd unit ***grandMA*** RPU (priority "Low"). When the Master fails, the 2nd unit (***grandMA*** light) will automatically become the Master, die RPU will remain Slave.

**5** In the left table, click on "Session".




**6** The right table will now show all units of the Session. Under „Status", the current priority will be displayed. In this case, for the **Light** only „Slave" will be displayed, the same priority as for the **Master**. For the **RPU**, "Slave will be displayed, i.e, the set priority of the **RPU** is „low", i.e. lower as that of the **Master**.

As soon as the connection is established, the normal operation of the units can start.

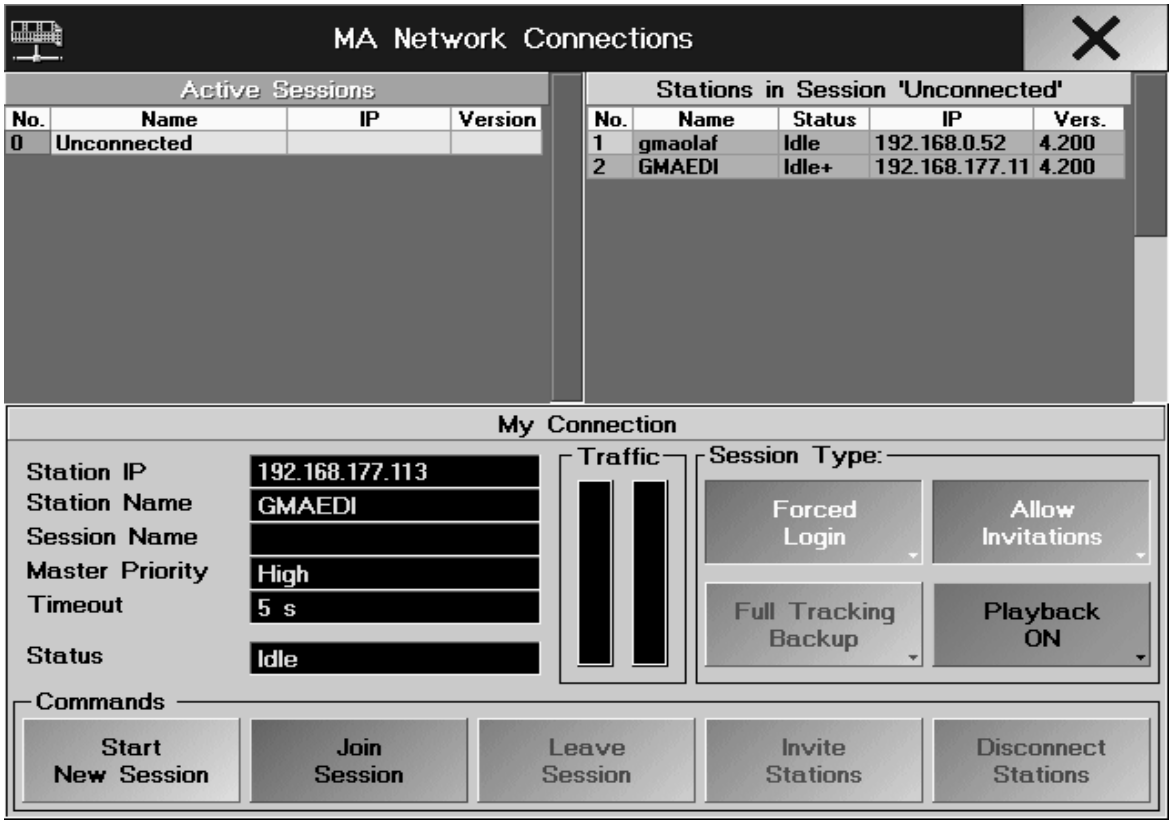
Differences between **Full Tracking, Multi User** and **Playback** ➡ next page.

**The Session will be kept, if not:**

- interrupted manually by pulling the EtherNet cable (or deactivating the EtherNet converter)
- terminated automatically due to of a detected communication problem
- terminated due to a hardware problem either on the Master or on the Slave

### 14.3.2 Resolving or leaving a Session

When resolving a Session, the Session will be kept for all units. Even if a unit leaves the Session, the Show will be kept for the unit.




#### Master unit

You can resolve the complete Session by pressing the **Leave Session** button on the Master.

You can also exclude a unit from a Session; to do so, click on this unit in the right table (blue background). By pressing the **Disconnect Station** button, it will be excluded.

#### Slave unit

When pressing the **Leave Session** button, this unit will leave the Session.

You can also exclude a unit from a Session; to do so, click on this unit in the right table (blue background). By pressing the **Disconnect Station** button, it will be excluded.

## 14.4 Full Tracking

When a Session is in Full Tracking, all data relevant for the Show plus the operations will be executed simultaneously on all units, except when currently working with Worlds ➠ next page

## 14.5 Multi User

**No** Pages on other units will be switched over, **no** Selections of Fixtures transferred, and **no** View switchings transferred. Using Worls will have a major effect in this case ➠ next pages.

## 14.6 Playback

When creating a Playback connection, the Shows will be kept on **all** consoles (**!**). The Remote Controlling of Executors has to be, if you want that, switched on or off by using the Exe Sync button in the World pool. ➠ See **Worlds** next page.

As 'backup', we recommend getting advice from the MA hotline (see below) when building complex networks.

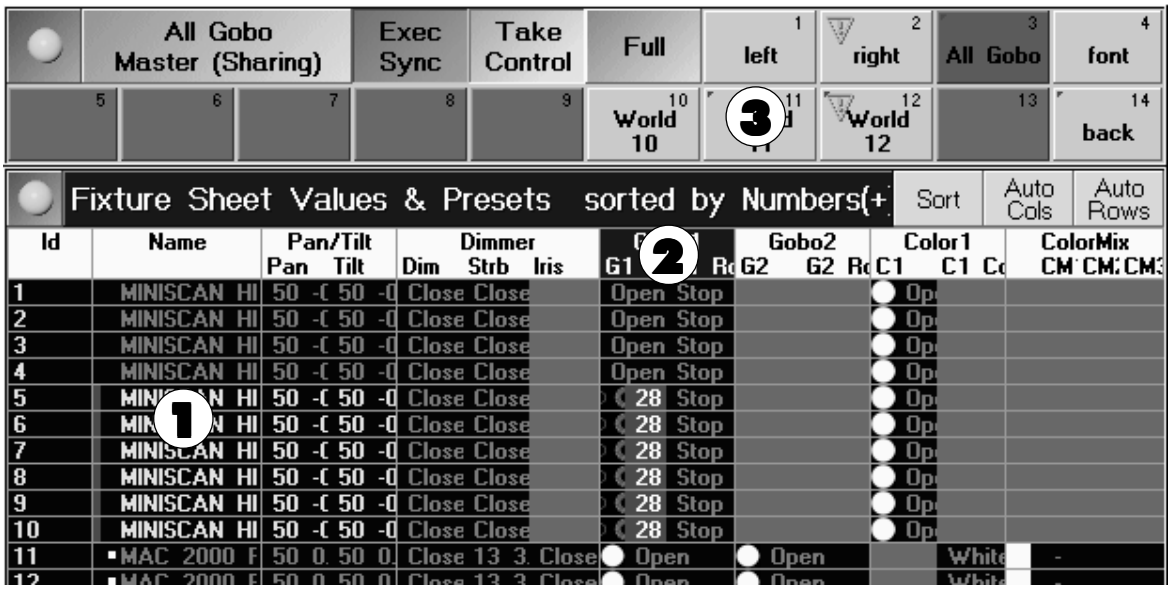
## 14.7 Worlds

In the World pool, you can create, call up or manage so-called “Worlds“.

Worlds can be created individually. Worlds can be used e.g. to split up complete Scanners (all Attributes) or individual Attributes of Scanners or just Dimmer channels or all Scanners and Dimmers for programming purposes - and, what is even more important, to run Executors.

### Creating Worlds

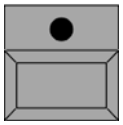
**e.g.:** In a World, the Scanners 1-10 are saved with the Dimmer and Color function. If you call up this World, only these Scanners will be displayed in the Fixture Sheet. Furthermore, only the Dimmer and Color functions can be modified. In the Channel or Fader Sheet, the Dimmer channels will no longer be displayed.




**1** Selecte Scanner or Dimmer channels.

**2** If you just want to store some Scanner attributes, you can activate these by double-clicking on them (these Attributes will be displayed in red for the selected Scanners).

STORE



Press the STORE key shortly.

**3** By clicking a button in the World pool, the World will be stored and operational. You can also give it a name directly by using the keyboard.

If **not all** Attributes are stored in a World, this will be indicated by a small red triangle in the left upper corner of the appropriate button.

## Working with Worlds

For the **programming** (creating the Show), Worlds are a great deal of help when it comes to creating Cues. If you select a World, only the assigned Scanner and Dimmer channels will be displayed, ready to be modified and stored.

For the **work with Executors** (Playback), you can activate the complete Playback section for the current World by using the „Take Control“ button. If you are in a network session that means that different users (units) can use different or overlapping Worlds.

Call up a **World** by clicking on it (will be displayed in dark green).

Press the Take Control button.

**Green:** As long as this button is green, all Cues of this unit will call up the stored functions **only** for the selected World, e.g.: „A“.

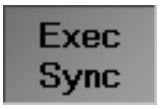
**Yellow:** If you now select World „B“ that is bigger than the previous World „A“, the color of the Take Control button will turn yellow. In this condition (yellow), you can, as before, control only those Scanners and Dimmers of the previous World „A“ (calling up Cues). By pressing the Take Control button again, the color will turn green again, and you can control the currently selected World „B“.
If another user (unit) uses **some** of the fixtures, and you press the Take Control button, it will turn yellow for the first user (unit), and you can only control the remaining fixtures.
In general, Yellow means: „I only have a partial Playback control“.

**Grey:** If **all** fixtures of the selected World were taken over from another user (unit) - other user presses the Take Control button - your own button will turn grey and will no longer have control over your „own“ World. By pressing the button again, you can regain the control.

**Red:** Scenario: World „A“ has been selected and Take Control was pressed (green). When you now change over to World „B“, in which fewer fixtures exist, this button will turn red. Warning: the User still has control over World „A“, as long as he does not press „Take Control“ again.

***Full World***. By pressing the Full button, **all** existing Scanner and Dimmer channels will be displayed again (complete World). The button will be displayed in green.

If you see a warning symbol on a button, it means that this World is presently being used by another User (user).




With the **Exec Sync** function, multiple users (units) can start calling Executors simultaneously (synchronously). In order to do so, this function must be switched on on **both** appropriate units by pressing this button (will be displayed in green).
This special function only serves synchronizing two different Worlds (Playback). And this function has to be switched on in a Playback session, if the Playback commands are to be transferred.

## 14.8 Remote Network Monitor

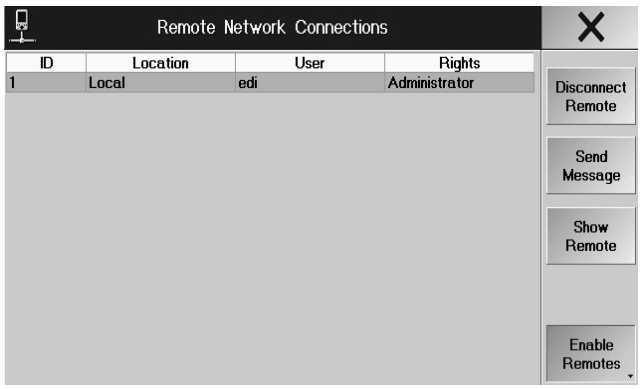
In the menu ***Tools/Remote Network*** all remotes, e.g. PDA's are displayed.

Button ***Disconnect Remote*** disconnect the selected remotes.

With ***Show Remote*** the selected remote is displayed on th eright touchscreen.

With ***Send Message*** you can chat with the selected remotes.

With***ENABLE / DISABLE REMOTES*** you can reject or enable a remote connection to your desk. Pressing ***Disable Remote***s does not interrupt the actual connection with a remote - press ***Disconnect Remote*** first.



# 15 Full Tracking Backup on *grandMA* consoles

## 15.1 Why using a backup system?

Anytime the ***grandMA*** or another member of the ***grandMA*** family is running a show it already provides a maximum level of stability in operation based on its unique hardware concept and the built-in UPS power supply. For applications like big theatre shows, live broadcasting or larger touring events even more security is sometimes required.

With other systems this is very often achieved by a second console loaded with the same show. This second desk ("backup system") is then manually tracked to take over control whenever the main system fails. Sometimes both consoles may be linked together via MIDI, MIDI Show Control or any other serial signal to perform a "playback tracking" which keeps both systems on the same cue. In a backup situation only the DMX-outlets need to be cross-switched.

The ***grandMA*** now offers a complete concept of show backup for moving light and conventional controllers.

## 15.2 *grandMA* with show backup

As the DMX signal distribution via EtherNet has been implemented to all ***grandMA*** systems the software release brings full backup capability via EtherNet.

### 15.2.1 Backup options via EtherNet

The Backup system can by used to combine multiple ***grandMA*** consoles (up to 10) to form a Master-Slave configuration. The console having the Slave function will permanently be provided with the current Show data, and furthermore, all Playback commands can be executed, so that it could take over the Show at any time, if the Master console fails or the connection is interrupted manually. Both the connected consoles will **always** run the **same** Show.

### 15.2.2 Tracking the Console Status

As soon as the ***grandMA*** Full-Tracking Backup has been set up and is operational, all important operating elements of the Master are simultaneously transmitted to the Slave system for parallel execution. If not set up this way, the Slave system will only follow the commands of the Master (main system), if the latter is operational. If the connection to the Master system is interrupted, or the Master itself crashes due to a hardware or software failure, the Slave system would not accept this invalid condition.
All these features as a whole let the ***grandMA*** provide a complete "Full Backup" without any compromise, offering maximum safety in any Show.

### 15.2.3 Using the True-Tracking Backup live

The ***grandMA*** Full-Tracking Backup system has been developed mainly, to ensure and cover any kind of live situation and critical Show conditions. Show recordings and final rehearsals will, however, be even better protected, by saving Show data at regular intervals, in between (by activating the „Autosave" or double clicking on the BACKUP button). One major advantage of a synchronisation via EtherNet is the possible combination with the DMX-EtherNet distribution (in this, the currently installed ArtNet, and PathPort protocols will be used). In order not to have to switch the DMX signals from the Master system to the Backup system in case of an emergency, the ***grandMA*** Master and the Slave console can be connected in a network via an Ethernet-DMX converter.

As long as the Master-Slave connection remains established in the network, the ***grandMA*** Master will actively transmit DMX data via the protocol; the Slave system will ignore the DMX-Ethernet settings. As soon as the Slave system is switched over into Master mode, it will immediately activate ArtNet protocol and start transmitting DMX data. All internal DMX interfaces will be active at any time.

## 15.3 Setting up a Network System

In order to set up a network configuration within the ***grandMA*** family, you can connect consoles of different types or with different numbers of DMX channels. The ***grandMA*** software is very flexible and can „correct“ possible differences in the current hardware.

### 15.3.1 Connecting consoles of different types

The master console always demands the slave(s) to behave like the master hardware. This means a “full” ***grandMA*** master forces a ***grandMA*** light slave to be a “full” ***grandMA*** temporarily. This results in phantom executor faders and buttons as the ***grandMA*** light (or ***grandMA*** replay unit) has a reduced hardware platform. Switching executor pages will then renumber the executors as given by the first executor on the master console.

When the connection is either manually or automatically (by a user-definable timeout) broken the slave console can be switched to Master mode with maintaining the setup and configuration of the “lost” master. For example, a ***grandMA*** master connected to a ***grandMA*** light slave will force the “light” to operate like a ***grandMA,*** even when the connection is lost and the ***grandMA*** light is forced to solo mode.

| Master Console | Executor Faders | Executor Buttons | Slave Console | Executor Faders | Executor Buttons |
|---|---|---|---|---|---|
| *grandMA* | 1 - 20 | 21 - 60 | *grandMA* | 1 - 20 | 21 - 60 |
| *grandMA* | 1 - 20 | 21-25, 31-35, 41-45, 51-55 | *grandMA* light + ultra-light | 1 - 10 | 21 - 40 |
| *grandMA* | 1 - 20 | 21-25, 31-35, 41-45, 51-55 | *grandMA* replay unit | 1 - 5 | 21 - 25 |
| *grandMA* light + ultra-light | 1 - 10 | 11 - 30 | *grandMA* | 1 - 10 | 11 - 30 |
| *grandMA* light + ultra-light | 1 - 10 | 11 - 30 | *grandMA* light + ultra-light | 1 - 10 | 11 - 30 |
| *grandMA* light + ultra-light | 1 - 10 | 11 - 30 | *grandMA* replay unit | 1 - 5 | 11 - 15 |
| *grandMA* replay unit | 1 - 5 | 6 - 10 | *grandMA* | 1 - 5 | 6 - 10 |
| *grandMA* replay unit | 1 - 5 | 6 - 10 | *grandMA* light + ultra-light | 1 - 5 | 6 - 10 |
| *grandMA* replay unit | 1 - 5 | 6 - 10 | *grandMA* replay unit | 1 - 5 | 6 - 10 |

The table shows what master/slave connections are possible and how many and which executor faders and buttons are available on the slave during Tracking Backup and in solo mode afterwards.

Please note that the slave’s assignment of executor faders and buttons restores to the hardware default after the console is once re-booted.

### 15.3.2 Connecting consoles with different DMX channel count

In a Full Tracking Backup system the DMX channel count of the master console demands a temporary update or downgrade of the connected ***grandMA*** slave automatically. If a 4096 channel master is connected to a 2048 channel slave the ***grandMA*** slave will take over the 4096 channels and process them in all conditions even when the connection is broken regardless of what the original installed channel count.

Rebooting the slave will restore the installed channel count immediately. In a Full Tracking Backup situation where the master is defective this may cause a loss of show data as only DMX channels 1 to 2048 are processed on “smaller” 2048 channel systems. Therefore please make sure that the channel upgrade is being implemented on the slave.

### 15.3.3 Using a PC as master or slave console

Though the ***grandMA*** Offline Editor software cannot be used to actively control DMX-channels as the DMX-Ethernet protocol is permanently disabled it still can be used in a master/slave connection with “real” ***grandMA*** consoles.

Because of the limitations of the PC hardware in combination with Windows® operation systems the ***grandMA*** Offline Editor must be seen as “weakest” part of the EtherNet chain therefore it may only be operated as slave console.

You may use this setup with a PC as slave to easily transfer show file data to other ***grandMA*** consoles (whatever type they are), especially when they are used on a distributed network.

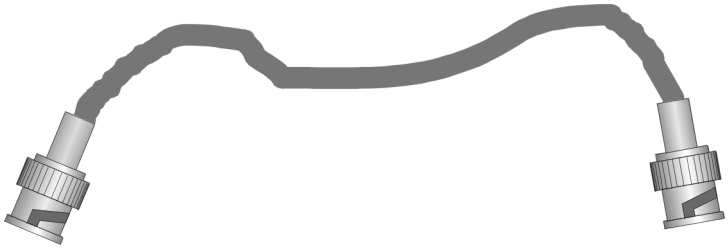
## 15.4 Connecting consoles for a Network Backup system

Any True Tracking Backup configuration with ***grandMA*** components may only be connected via a EtherNet communications network. The ***grandMA*** consoles currently support two different hardware types of transmission media.

### 15.4.1 10 Base-2 EtherNet (not for *grandMA* ultra-light)

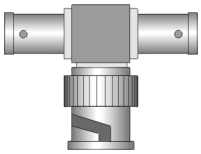
EtherNet with 10 Base-2 connection media (also known as "Cheapnet") has lost its importance in todays networking technology. Nevertheless as 10 Base-2 systems are very easy to configure and they do not require additional networking nodes or hubs they might be used to easily link two or more ***grandMA*** consoles. As the built-in EtherNet card of the ***grandMA*** console autosenses the used connection media there is no need to configure the console's hardware at any time.

The connection cable used for 10 Base-2 EtherNet is a 75 ohm coaxial cable (RG-58U) with male BNC connectors on both ends. The maximum cable run is up to 180 metres from end-to-end.



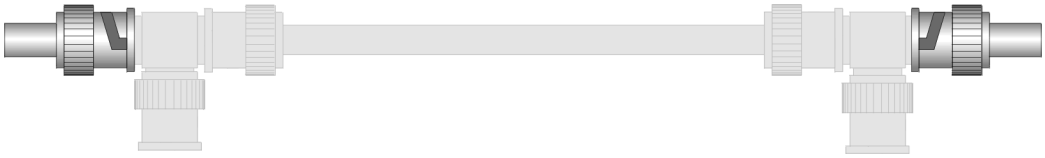
**BNC cable to be used for 10 Base-2**

All connections to any kind of networking units (like consoles, PCs or Hubs) require the use of a "T"-connector, which has to be connected to the BNC output of the console. Extension cords are not permitted.



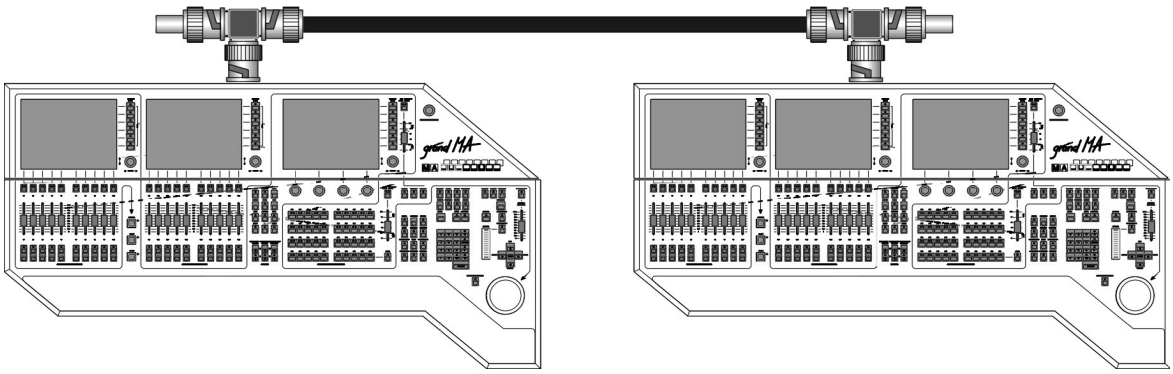
***"T"-connector to be used with10 Base-2 network nodes***

Any connection cable used for 10 Base-2 EtherNet has to be terminated on both ends with 75 ohm resistors. If these resistors are disconnected or of the wrong value no network operation will be possible.



***Line termination on 10 Base-2 network***

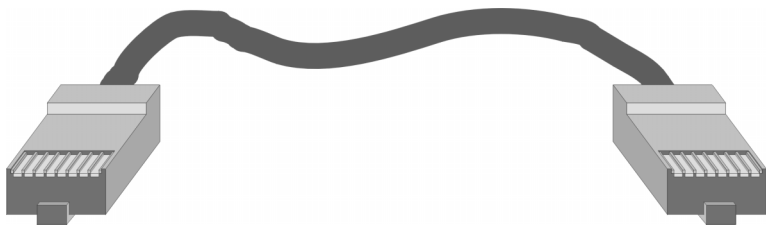
10 Base-2 EtherNet can be used for ***grandMA*** master/slave connections when no ArtNet DMX-Nodes or other distribution equipment is planned to be used. For longer cable runs or distributed networks 10 Base-2 EtherNet is not recommended any more.



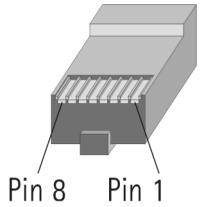
***Two grandMA consoles connected on a 10 Base-2 network***

### 15.4.2 10 Base-T EtherNet

The most common EtherNet connection is the “twisted pair” link using 10 Base-T EtherNet. Hereby a peer-to-peer connection is established by minimum 4-wire cable connection at a maximum length of 100 metres. The cable is always equipped with 8-pole RJ-45 crimp-connectors.



***“Twisted pair” cable to be used for 10 Base-T with RJ-45 connectors***




| Pin No. | Colour of Wire (PDS/258A) | 10BASE-T Signal |
|---|---|---|
| 1 | T2 white, orange stripes | Data transmit + |
| 2 | R2 orange | Data transmit - |
| 3 | T3 white, green stripes | Data receive + |
| 4 | R1 blue | *Not used* |
| 5 | T1 white, blue stripes | *Not used* |
| 6 | R3 green | Data receive - |
| 7 | T4 white, brown stripes | *Not used* |
| 8 | R4 brown | *Not used* |

***Pin numbers on RJ-45 connector and 10 Base-T standard signal assignment***

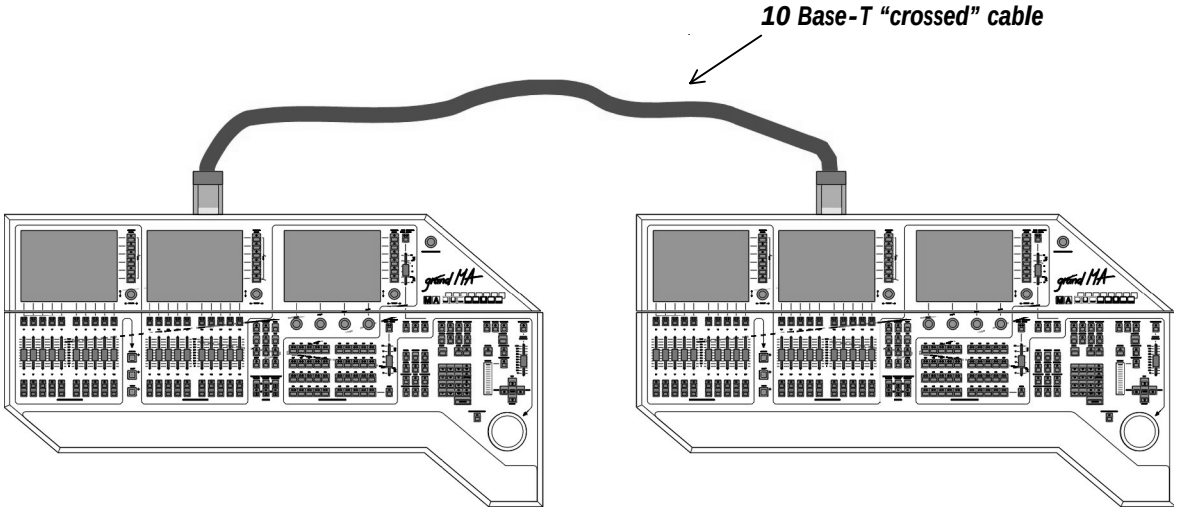
As 10 Base-T EtherNet always requires an EtherNet hub to distribute the signal (connections from console to console go via a hub) a useful application will be any network where more than two consoles or consoles with additional equipment (such as ArtNet DMX-Nodes) are proposed.

For a simple peer-to-peer connection between two consoles a “crossed” 4-wire cable MUST be used.

| | Master Console End | | | Slave Console End | |
|---|---|---|---|---|---|
| Pin No. | Colour of Wire | 10BASE-T Signal | | Colour of Wire | 10BASE-T Signal |
| 1 | T2 white, orange stripes | Data transmit + | | white, green stripes | Data transmit + |
| 2 | R2 orange | Data transmit - | | green | Data transmit - |
| 3 | T3 white, green stripes | Data receive + | | white, orange stripes | Data receive + |
| 4 | | *Not used* | | | *Not used* |
| 5 | | *Not used* | | | *Not used* |
| 6 | R3 green | Data receive - | | orange | Data receive - |
| 7 | | *Not used* | | | *Not used* |
| 8 | | *Not used* | | | *Not used* |

***“Crossed” cable to be used for 10 Base-T peer-to-peer connections***

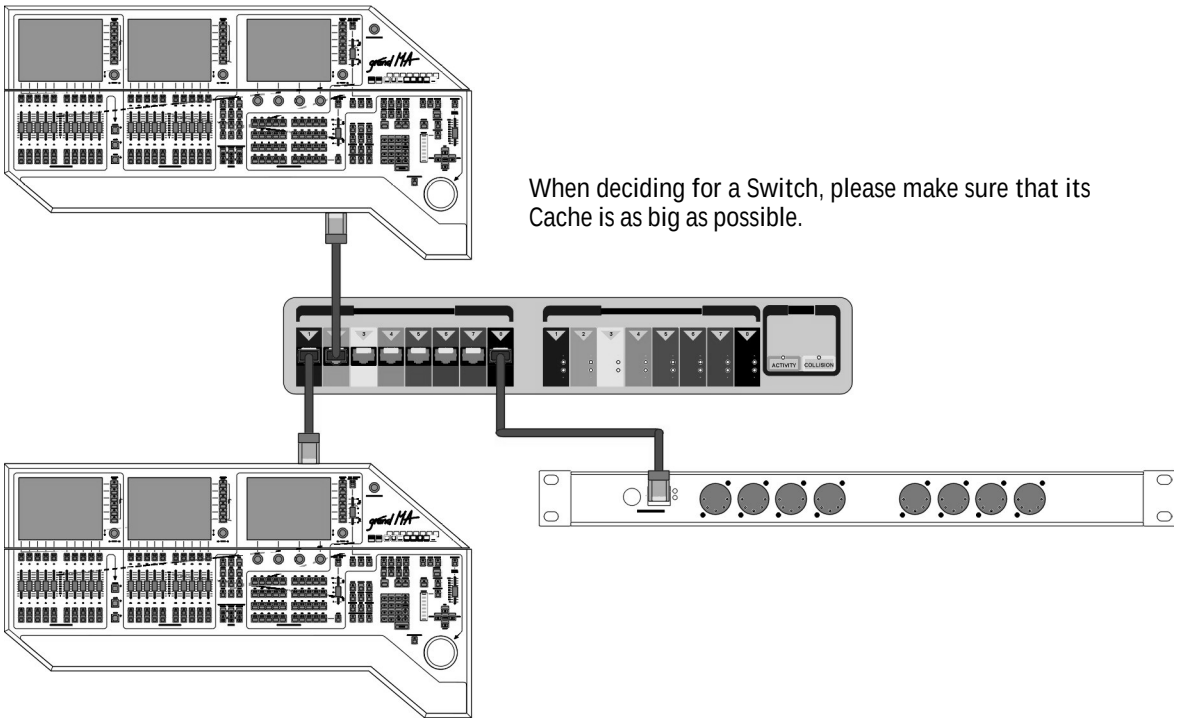
Using a “crossed” 10 Base-T cable will allow a direct console-to-console connection but no additional components can be added to this connection type later on.




***grandMA* Master/slave configuration with 10 Base-T “crossed” cable**

The console(s) can only work on one transceiver type at a time - when the 10 Base-2 port is in use anything connected to the 10 Base-T outlet is ignored and vice versa. If you want to connect more consoles at one time or the use of a ArtNet DMX-Node is required a 10/100 Base-T EtherNet-switch must be installed.
Also for security reasons on longer cable runs or branched wiring a 10/100 Base-T switch is strongly recommended (like a DMX-booster on larger DMX-networks).

The following example shows a network configuration with two identical consoles and an ArtNet DMX-Node for DMX changeover and distribution. All components are star-wired from a central EtherNet hub using standard 10 / 100 Base-T cabling.




***grandMA* Master/slave configuration with 10/100 Base-T Switch and ArtNet DMX-Node**

# 16. PDA - Remote Control

## Introduction

The PocketPC is the ideal complement to our ***grandMA*** console. It combines the functionality of a console with the mobility of a compact organiser. It serves to remotely control the major operations and must be used together with the console. It is not intended to and cannot replace the programming at the console, as for reasons of visibility, only the most important menus will be displayed. Working with these menus is explained in the appropriate chapters of the ***grandMa*** User's Instructions; alternative operation and special key layout will be explained on the following pages.

## The following devices are suitable

So far, the following products have proved successful: (as of 01/2003)

COMPAQ iPaq Serie 36xx with extensionPack PCMCIA
COMPAQ iPaq Serie 38xx with extensionPack PCMCIA
TOSHIBA e740/e750 version WiFi (recommended by MA Lighting)
DELL Axim X5 with Linksys CF Wireless Adapter
HP iPaq Pocket PC H5400 family with ROM-update (from 17.03.2003)

as access points: (as of 01/2003)

ASUS SpaceLink WL-300
Linksys DI-614+
3-COM WLAN Access point 2000
D-Link DWL-900APP+ Wireless Access Point
E-POX EWL-A11 Accesspoint

## Installation

Install the Wireless Access Point according the the manufacturer's instructions.

On the PocketPC, select the installed adapter under SETTINGS / CONNECTIONS / NETWORK ADAPTER and enter the IP address plus subnet mask number 255.255.255.0 under PROPERTIES (➠ ***14.1*** Preparing the Network settings).

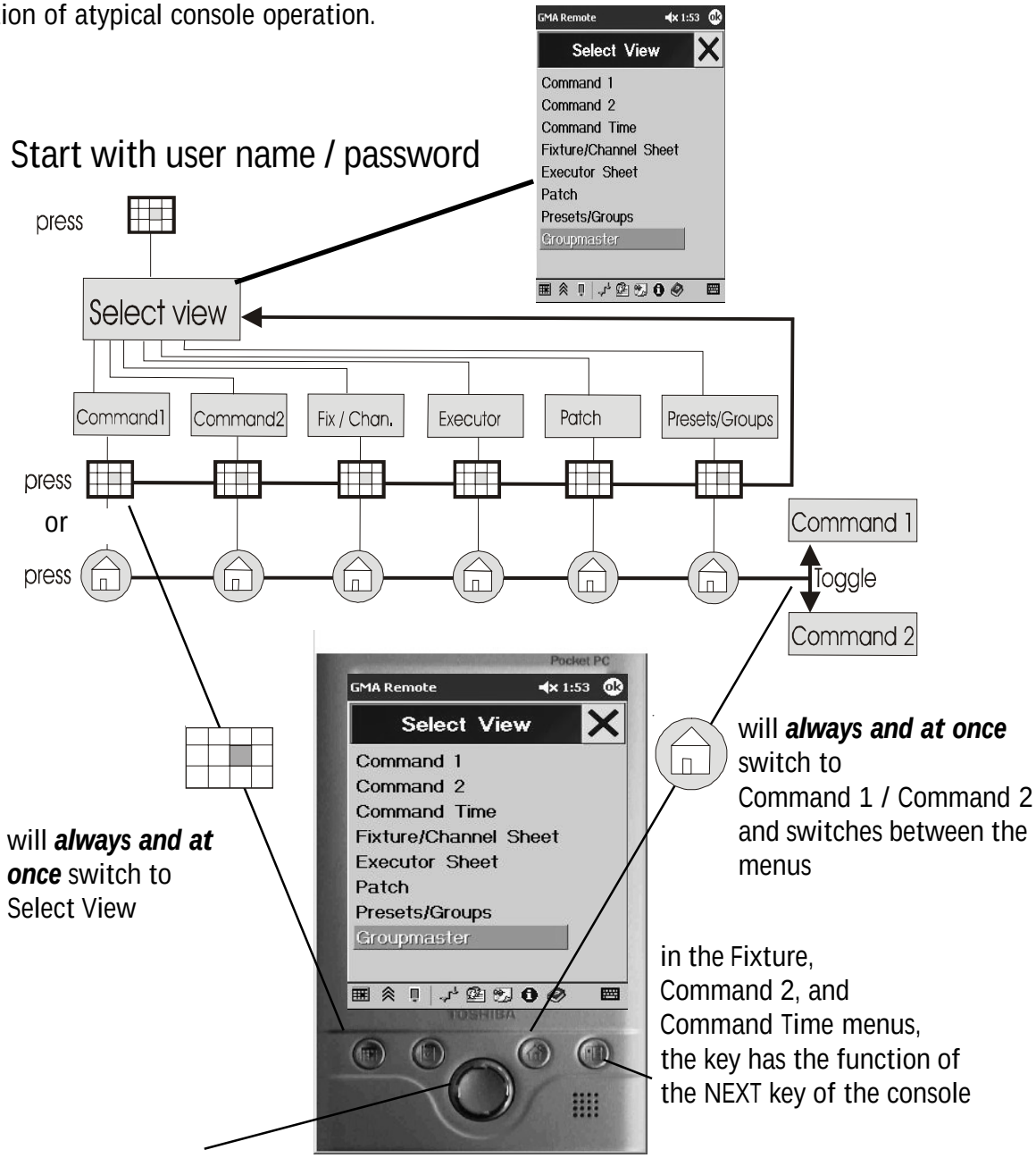
Download the „REMOTE X.X" software from our website and connect the PocketPC via COM or USB interface with a PC. The program ACTIVE SYNC must be installed. Start the SETUP.EXE file - the software for remote controlling the ***grandMA*** console will be installed on the PocketPC.

When all software and hardware requirements are met, the PocketPC is operational:

Switch on the console
Switch on the PocketPC
Call up the GMA-REMOTE program
Select the desired console
Log in with a user name and password (has to be registered in the console)

You can connect up to 6 remote controls. ATTENTION: selected fixtures apply for all connected units and for the console.

The flow chart shows the Views available in the PocketPC. On the following pages, you'll find a description of atypical console operation.




Depending on the menu, the cursor can have different functions, but will always have the purpose of moving (scrolling) or entering values (value - pressing on the outer edges) or confirm or switching over (pressing in the middle)

***The key layout is identical for all PocketPCs, even if the symbols on the keys differ, have other symbols or the keys are arranged differently.***

Besides the label, the buttons have, depending on their operational task, different symbols, to make orientation easier:

| | | | |
|---|---|---|---|
| ▼ | (black) | = | pressing shortly or long will bring up a menu |
| → | (black) | = | reference to the next menu, you could open |

The following terms are used to explain the keys to refer to different effects:

| | | |
|---|---|---|
| ***short:*** | = | short press on the key, to get to the function |
| ***long:*** | = | long press (time can be set in the PocketPC) the function will be started after this time (acoustic signal) |
| ***toggle:*** | = | each time you press the key, the next function is selected |
| ***press center:*** | = | press on the cursor in the middle |

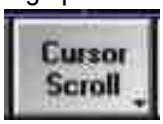
To set values by the Cursor, you can define three setting speeds: coarse - fine - finest

The setting can be performed either

- using this key, and with each press you will switch from one setting speed to the next one,

or

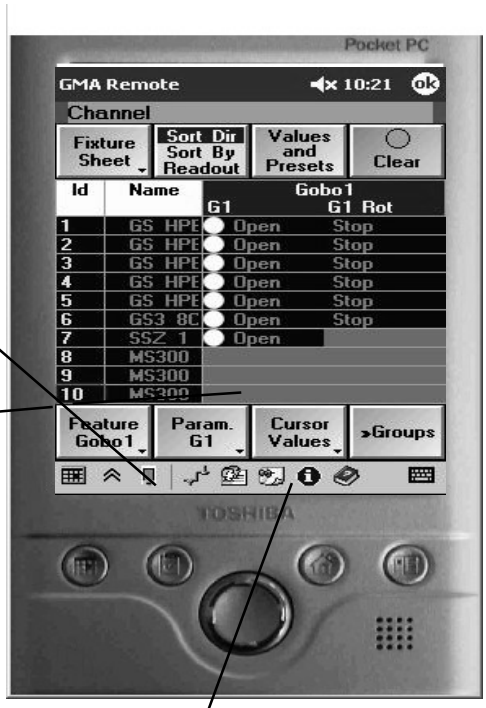
- pressing the Cursor Scroll key ***long*** and selecting the setting speed in the menu



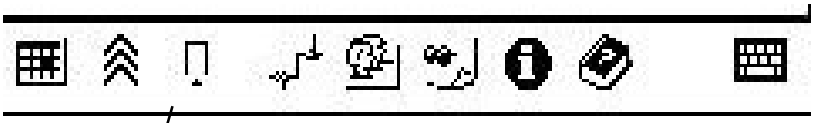

or

- using ***toggle*** in the taskbar, and with each press the setting speed will be switch to the next one.

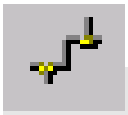
^ = finest ^^ = fine ^^^ = coarse




Taskbar



Using more than one remotes can cause bad screen display (parts of the menue are missing).
Press REFRESH SCREEN to actuate the screen..



***Available Desks:***

***toggle:*** see the available desks or the standard menu
(red cross: desk is available, green hook: desk is connected)

***Chat Menu:***

menu to send messages to desks/user in the net

close the menu with ok

***Buttons:***

Here you can adjust the hold-down time for some hard- and softkeys

Here you can swith on/off the horizontal cursor buttons during the value setting. The cursor left/right can adjust the next parameter e.g. if in COLRMIX the parameter CM1 is set the vertical Cursor adjusts CM1, the horizontal Cursor may adjust (this setting) CM2.

***Chat:***
set the acoustic signal on/off

***Current IPs:***
shows the actual IP-address of this pocketPC

Close the menu with ok

***HELP-Menu:***

Information for button- and cursor functions
Close this menu with ok

# Menus

***COMMAND 1***

call with SELECT VIEW or pressing the key. The keys shown are equal to those on the console, any entry will also be displayed on the console.

When entering data on the Command Line, you have to toggle between the 2 Views to get to the respective buttons.

e.g.

DELETE CUE (Command 2) 50 ENTER (Command 1)

***COMMAND 2***

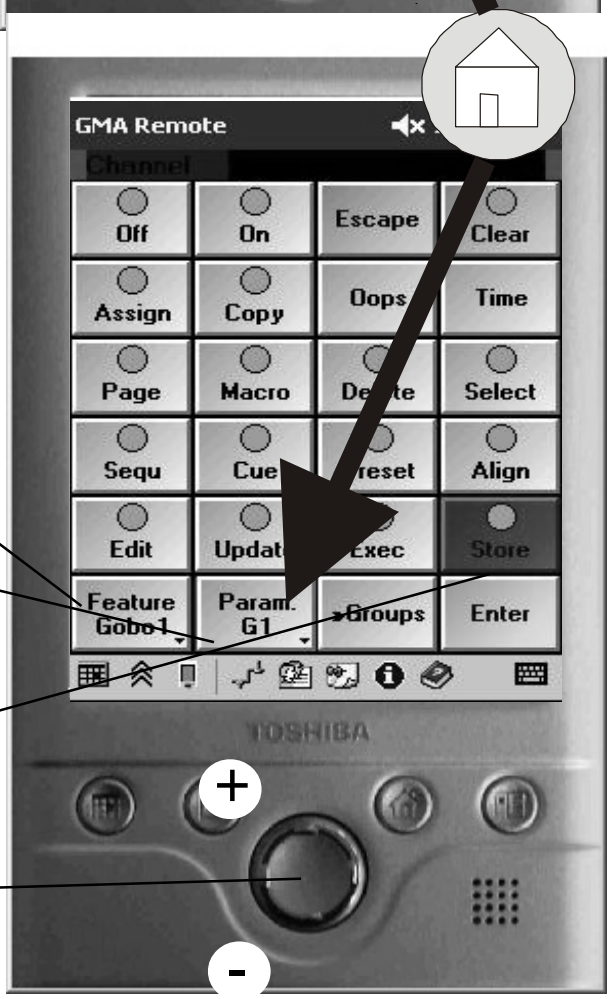
call with SELECT VIEW or pressing the key. The keys shown are equal to those on the console, any entry will also be displayed on the console.

e.g. Select Fixture (in COMMAND) and „blind“ (i.e. without displaying the values), modiy the parameters

***short:*** Select the parameter
***long***: Calculator

***long:*** STORE OPTIONS

Modify the current parameter



## Command Time

To set the Fade / Delay times; after having selected Fixture and Feature, enter in the following sequence:

- Fade / Delay
- numeric value
- time dimension (must have a red background)
- ENTER

Backspace to delete the last entry in the CommandLine

Escape to delete the CommandLine

blue background + ***short:*** ***toggle:*** hours/minutes/seconds

***long:*** marked dimension will get a red background and remains set as it is

***short:*** choose the Feature
***long:*** Pull down menu of the Features

After confirming with ENTER, the COMMAND 2 menu will be called up automatically

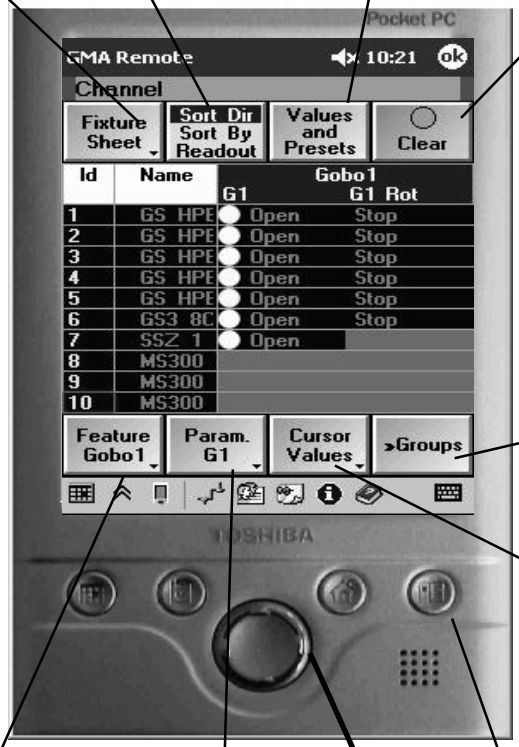
***Fixture / Channel Sheet***

***toggle:***
Fixture
Channel
Fader

***toggle:***
Sort Dir
Sort By
Readout

Switching to Values and Presets
fades
Delays
Values Only
DMX
Executor ID
Cue ID

Clear button




***toggle:***
Presets sheet

In the Channel/Fader sheet, activate the Cursor scroll

in the Fixture sheet
***toggle:*** Cursor scroll
Cursor value

***short:*** Choose the Feature

***short:*** Select the parameter (if more than one)
***long:*** Calculator - when name marked in the Fixture

***short:***
same function as of NEXT key on the console
***long:***
Pull down menu

for Cursor Scroll:

- scrolling in the Sheet
  when name is marked (frame around the name blinks)
- ***press:*** OPTIONS will be displayed

for Cursor Values (name must be marked and frame around the Feature blinks)

- ↕ changes the values of the chosen parameter
- ↔ only with activated „Change Parameter“ in the Button menu
  - with feature PAN/TILT change values in PAN and TILT
  - with other features change values of the right neighboured parameter
- ***press:*** to the next parameter (e.g. Color1, Color 2...)

displays the current Sheet
***toggle:***
Fixture Sheet
Fader Sheet
Channel Sheet

***short:***
Selection

***short:***
toggle between scroll / value
***long:***
cursor mode

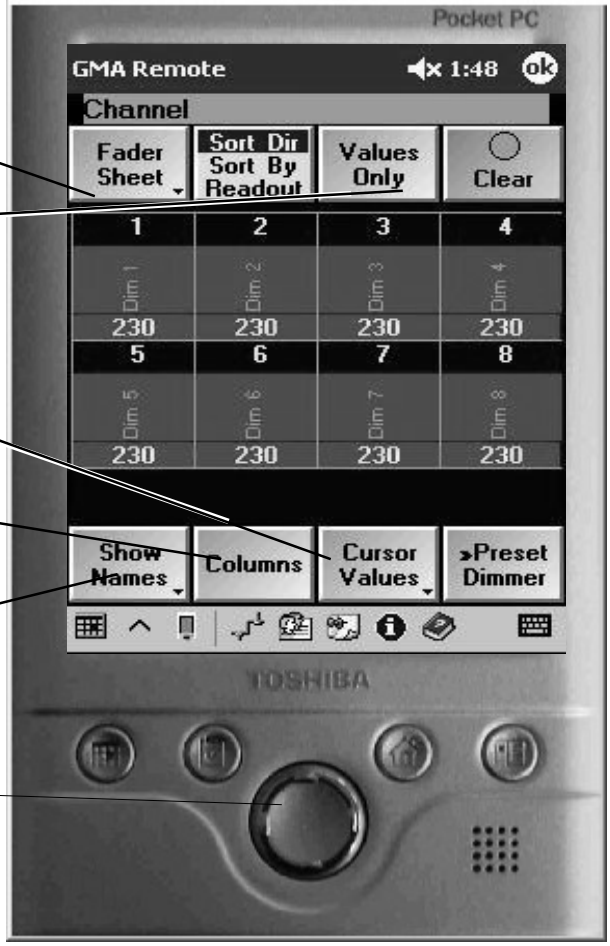
***short:***
The figure indicates, how many channels will be displayed in one column. Enter a new number (x - x) and confirm with OK

***short:***
displayes names of channels and faders

for Cursor Scroll
- scrolling in the Sheet

for Cursor Values
- ↕ to change the values of the marked Dimmers

for marked name (frame around the name blinks)
- ***press:*** OPTIONS of the Dimmers will be displayed




displays the current Sheet
***toggle:***
Fixture Sheet
Fader Sheet
Channel Sheet

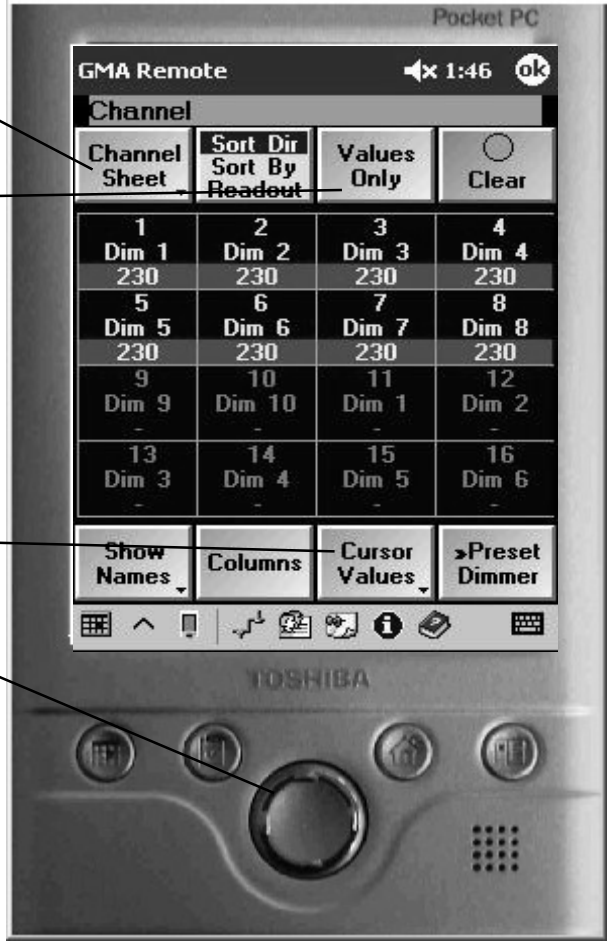
***short:***
Selection

***short:***
toggle between scroll / value
***long:***
cursor mode

for Cursor Scroll
- scrolling in the Sheet

for Cursor Values
- ↕ to change the values of the marked Dimmers

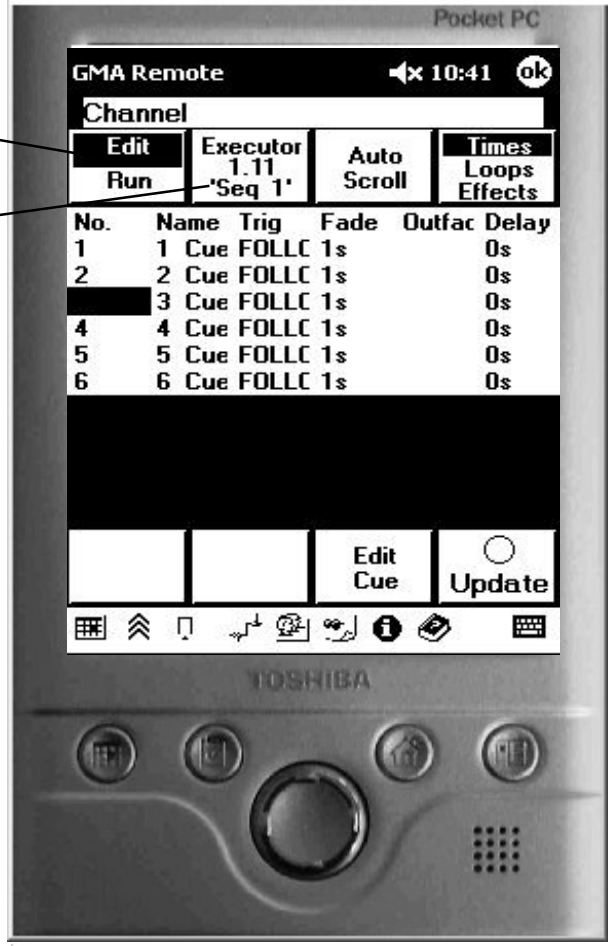
for marked name (frame around the name blinks)
- ***press:*** OPTIONS will be displayed



### *Executer / Edit*

***toggle:***
Run / Edit

***long:***
to select the Executor




### *Executer / Run*

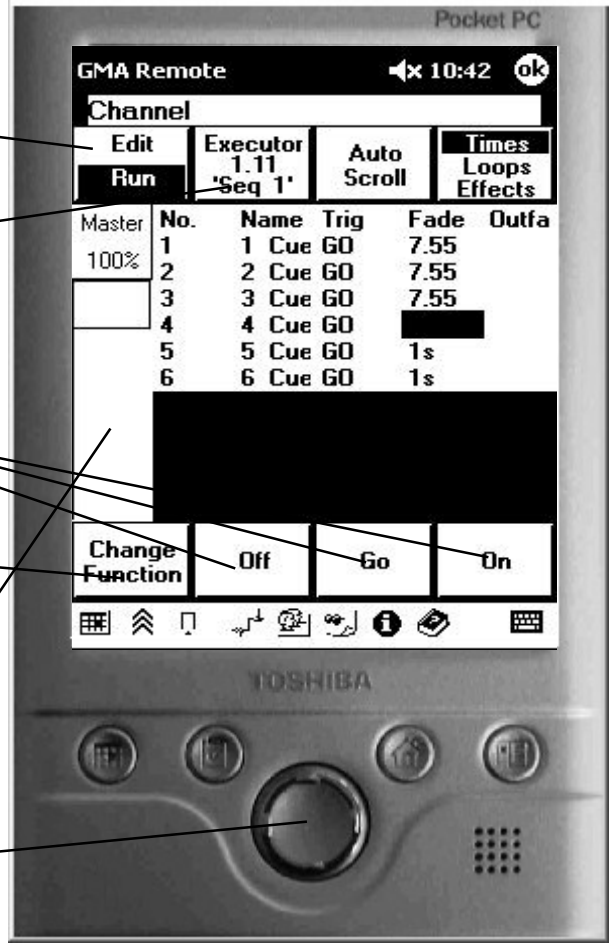
***toggle:***
Run / Edit

***short:***
to select the Executor

***short:***
the chosen functions will be executed

***short:***
Changes the function of the three right buttons: if CHANGE FUNCTION lights green press one of the buttons and select a new function. After the second press on CHANGE FUNCTION the chosen functions will be executed

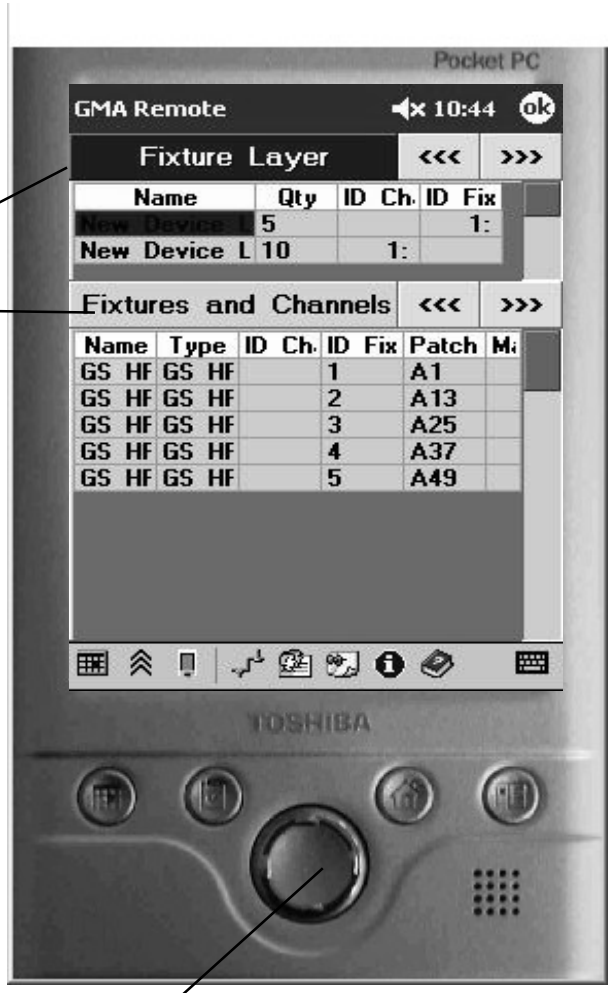
to set the Master using the Cursor



***Patch***

Note: on the console, FULL ACCESS may NOT be opened in the SETUP!

switch with Touch, active part has a heading with a dark blue background




- scrolling in the Sheet

for the marked cell

- press center, to change the contents of the cell or make entries (depending on the cell's contents) - same function as the Encoder of the console

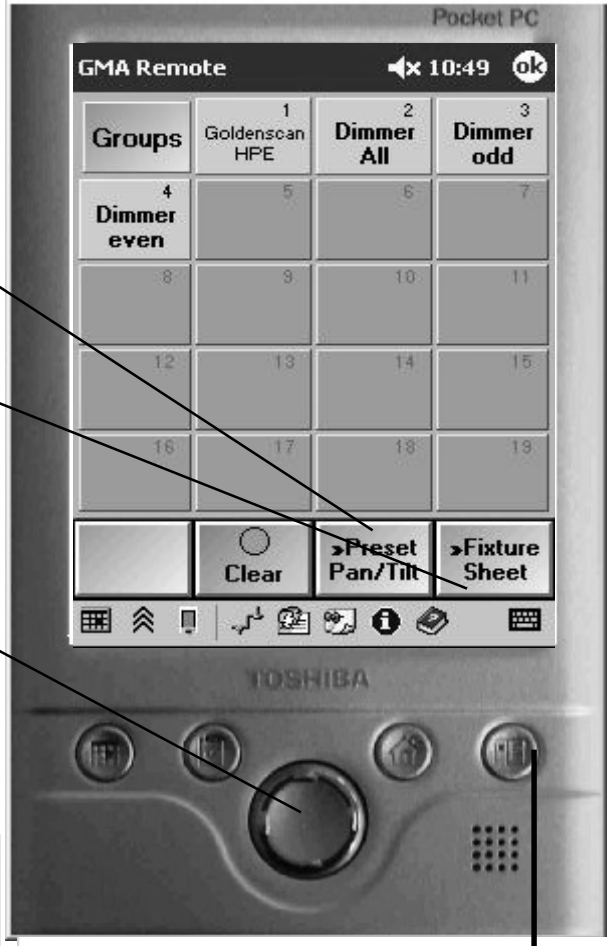
***Groups***

***toggle:***
Groups
Presets

***toggle:***
Fixture
Groups

- ↔ jump to the next Group button
- ↕ jump to the next Group area
- ***press:*** OPTIONS will be displayed

***short:***
same function as NEXT key on the console
***long:***
pull down menu for Prev., ALL, ODD, EVEN



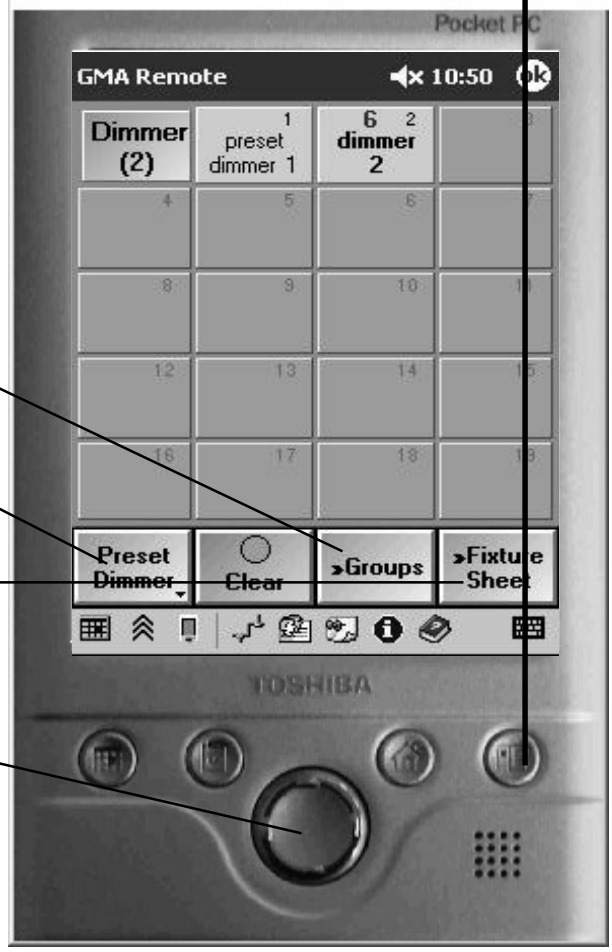

***Presets***

***toggle:***
Groups
Presets

Pull down menu of the Features

***toggle:***
Fixture
Presets pool

- ↔ jump to the next Preset button
- ↕ jump to the next Preset area
- ***press:*** OPTIONS will be displayed

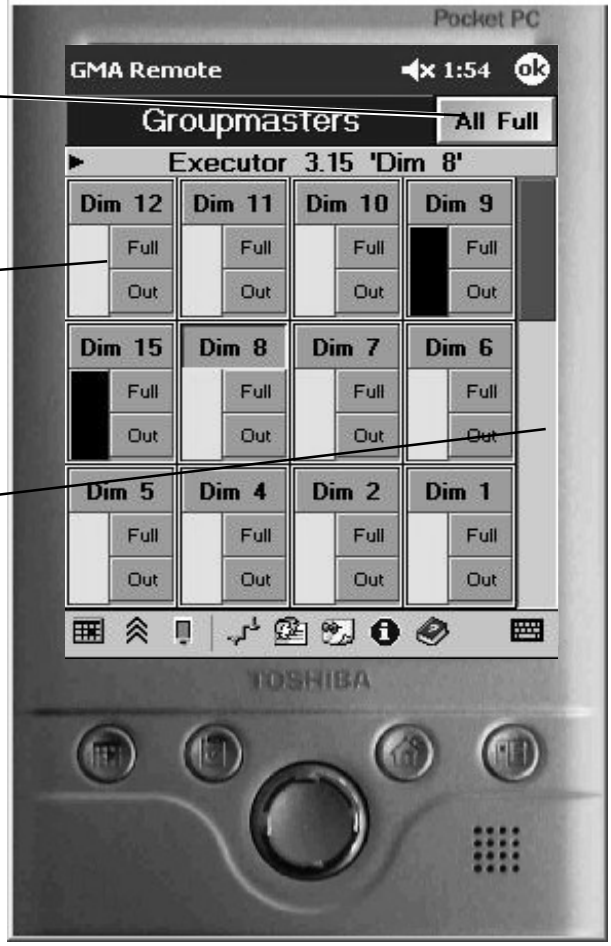


***Groupmasters***

***short:***
***All Full*** sets all groupmaster to full

***Full*** master is set to full
***Out*** master is set to zero
***scroll*** the master to the desired value

***scroll***
display can show max 12 masters; if more masters are created, scroll to the next page with also 12 masters



# Fixture Library

| Manufacturer | Fixture Name | No. of Channels |
|---|---|---|
| | DIMMER 8 BIT | 1 |
| | DIMMER 16 BIT | 2 |
| | DIMMER 16 BIT FIne first | 2 |
| | SCRxx-01 | 1 |
| | SCDxx-01 | 2 |
| | SRDxx-02 | 2 |
| **ABSTRACT** | Galactic Moon | 2 |
| | Futurescan | 4 |
| | Scenesettece | 2 |
| **ADB (BBA)** | Ingenio COLOUR Ch. | 11 |
| **AMPTOWN** | ACC Posi Spot | 4 |
| | Contr.PML MK2 | 12 |
| | Contr.PML ZOOM | 23 |
| | Contr.WL HX | 7 |
| | Contr.WL HX TV | 10 |
| | Contr.WL HX Sq | 15 |
| | Contr.WL HP | 10 |
| | Contr.WL HP TV | 12 |
| | Contr.WL HP Sq | 16 |
| **B+K** | Varytec | 5 |
| **CAMELEON** | TELESCAN MARK I | 8 |
| | TELESCAN MARK IV | 19 |
| **CLAY PAKY** | Miniscan 300 | 4 |
| | Miniscan HPE | 7 |
| | Goldenscan2 | 6 |
| | Goldenscan3 6ch | 6 |
| | Goldenscan3 8ch | 8 |
| | Goldenscan HPE | 12 |
| | Superscan 12ch | 12 |
| | Superscan MRG | 12 |
| | Superscan Zoom 12ch | 12 |
| | Superscan Zoom 16ch | 16 |
| | Stage Scan 17ch | 17 |
| | Stage Light 300 | 10 |
| | Stage Color 300 | 10 |
| | Stage Color 575 | 14 |
| | Stage Color 1000 | 11 |
| | Stage Color 1200 | 14 |
| | Stage Zoom 19ch | 19 |
| | Shadow | 4 |
| | Tigerscan | 6 |
| | Pinscan | 3 |
| | Bazuka | 6 |
| | Polycolor | 6 |
| | Tiger MRG | 4 |
| | Tiger COLOUR Changer | 3 |
| | Combicolor | 4 |
| | Tornado | 8 |
| **COEF** | Performance 200 | 6 |
| | Performance1-3 6Ch. | 6 |
| | Performance3 9Ch. | 9 |
| | Performance4 10Ch. | 10 |
| | Coef 1200 Disco | 8 |
| | COLOR SHOW 200 | 5 |
| | MP 250 Optic HR+ | 9 |
| | MP 250 FRESNEL HR+ | 9 |
| **COEMAR** | Microscan 3 | 8 |
| | Samurai | 8 |
| | MINI ULTRA 200/250 | 6 |
| | MINI ULTRA 2 | 8 |
| | NAT MM 1200 DX | 10 |
| | NAT MM 1200 PR 13Ch | 13 |
| | NAT MM 1200 ZOOM 20C | 20 |
| | MM 2500 Zoom | 20 |
| | Nat TM 1200 DX | 12 |
| | Nat TM 1200 DXP | 14 |
| | Nat TM 1200 20ch | 20 |
| **COEMAR** | Nat TM 1200 Power | 20 |
| | Nat TM 4000 | 20 |
| | Nat TM 2500 21Ch | 21 |
| | CF 1200 Hard Edge | 20 |
| | CF 1200 Spot | 13 |
| | PC 1000 CC | 8 |
| | Pchmi | 9 |
| | CF6 (TAS) | 12 |
| | CF7 Hard Edge | 20 |
| | CF7 Zoom Wash | 13 |
| | CF7 Hard Edge | 20 |
| | ProWash250LX | 14 |
| | ProSpot250LX | 17 |
| | i-Spot150 | 13 |
| | i-Spot575 | 20 |
| | i-Spot575EB | 22 |
| **DHA** | DHA Light Curtain | 2 |
| | DHA P Light Curtain | 3 |
| | DHA Network | 1 |
| **FAL** | FAL 2000 | 7 |
| | FAL 2500 XL/XLD | 11 |
| | FAL 2500 XLDX | 14 |
| | Roulette 575/1200 | 8 |
| | Proscan II HR | 14 |
| | Proscan X HR | 13 |
| | Promo 2/3 | 6 |
| | Three-Sixty | 8 |
| | Three-Sixty2 | 10 |
| **FLY** | FOS 3 | 12 |
| | FOS 4 | 12 |
| | Palette | 5 |
| **FUTURE-LIGHT** | Miracle | 4 |
| | CC-200 | 4 |
| | RT-150 | 4 |
| | SC-330/370 | 4 |
| | H-150 | 4 |
| | Future H250 | 4 |
| | Promotion Scan HR | 11 |
| | Genesis | 8 |
| | Voyager | 8 |
| | Duke 1200 | 8 |
| | Advert Scan HR | 11 |
| | SC-250 | 6 |
| | SC-530/570 | 10 |
| | SC-740 | 13 |
| | SC-780 | 16 |
| | SC-940/980 | 16 |
| | MH-640 | 15 |
| | MH-840 | 16 |
| | MH 660 Spot | 16 |
| | MH 860 Spot | 16 |
| **GENIUS** | Omega2 | 10 |
| **GLP** | Mini Star Tec 6Ch. | 6 |
| | Mighty Scan | 6 |
| | MAX | 8 |
| | Startec 2000 9Ch. | 9 |
| | Startec 1200 12Ch. | 12 |
| | Joy 300 | 11 |
| | Patend 575 PAN_coars | 13 |
| | Patend 575 PAN_FINE | 13 |
| | Patend 1200 | 17 |
| **HIGH END** | Xspot | 38 |
| | Trackspot | 7 |
| | Technobeam HR 18ch | 18 |
| | Technobeam IrisHR | 18 |
| | Intellabeam 8ch | 8 |
| | Intellabeam HR 13ch | 13 |
| | Cyber CX M3 litho | 15 |

| | | |
|---|---|---|
| **HIGH END** | Cyber CX M3 | 15 |
| | Cyber m1 Litho | 20 |
| | Cyberlight m1 | 20 |
| | Cyberlight m2 | 20 |
| | Cyber m2 Litho | 20 |
| | Studiocolor | 16 |
| | Studiocolor 250 | 15 |
| | Studio Spot 575 | 24 |
| | Studio Spot CMY | 24 |
| | Studio Beam PC V1.0 | 16 |
| | Studio Spot 250 | 18 |
| | Color Pro Std+HX | 6 |
| | Color Pro Enh+HX | 9 |
| | Technopro HR 12ch | 12 |
| | Trackspot mainlight | 5 |
| | Technoray hR 14ch | 14 |
| | Dataflash | 3 |
| **J.B.** | Varyscan 3 SP+ 6CH. | 6 |
| | Varyscan 3 SP+ 8CH. | 8 |
| | Varyscan 3 700 | 13 |
| | Varyscan 4 | 8 |
| | Varyscan 4 EV | 11 |
| | Varyscan 5 MV | 22 |
| | Varyscan 6 spot | 12 |
| | Varycolor 6 wash | 12 |
| | Varycolor | 6 |
| **JEM** | JEM Hydrosonic 2000 | 2 |
| **LAMPO** | Sintesi+Super | 6 |
| | Columbus 1200 AF | 10 |
| **LE MAITRE** | G300 Smoke | 2 |
| **LICHTTECHNIK** | Motor Yoke 300,330 | 17 |
| **LITEBEAM** | SWING I | 6 |
| | Chandra I | 7 |
| | SWING II HR | 14 |
| | Chandra II HR | 14 |
| **LSD** | Colormag | 1 |
| | Molemag | 1 |
| **LYTE QUEST** | MotorHead | 5 |
| **MAD LIGHTING** | Qstar | 4 |
| | Star511 | 5 |
| | Scan411 | 4 |
| | IMP407 | 4 |
| | Qscan | 5 |
| | Scan611 | 6 |
| **MARTIN** | Roboscan 218 m3 HR | 9 |
| | Roboscan 518 m3 HR | 9 |
| | Roboscan 812 7ch | 7 |
| | Robo 918 m4 | 16 |
| | Robo 1020 | 12 |
| | Robo 1220 | 16 |
| | Imagescan m2 | 9 |
| | Robo 1220 XR m4 HR | 15 |
| | Robo 1220 cmyr m4 | 19 |
| | Robo 1220 rpr m4 | 17 |
| | Pal 1200 m4 | 26 |
| | Pal FX 1200 m4 | 20 |
| | Mac2000Prof | 24 |
| | MAC2000 performance | 31 |
| | MAC200 wash | 21 |
| | Mac 1200 m4 | 14 |
| | Mac 600 m4 | 14 |
| | Mac 600 NT m4 | 15 |
| | Mac 500 m4 | 16 |
| | Mac 300 m4 | 13 |
| | Mac 250 m4 | 13 |
| | MiniMac Pr m4 | 10 |
| | MiniMac WS m4 | 8 |
| | MX-1 | 6 |
| | MX-4 7ch | 7 |
| | QFX 150 | 5 |
| **MARTIN** | CX-2 | 4 |
| | Robocolor MSD EX | 7 |
| | Robocolor pro4 5ch | 5 |
| | Exterior 9ch | 9 |
| | Exterior 7ch | 7 |
| | Exterior 5ch | 5 |
| **MORPHEUS** | PANa Beam | 4 |
| | COLOUR Fader CMY | 3 |
| | COLOUR Fader DIMMER | 4 |
| **MOVITEC** | SL250 | 15 |
| | WL250 | 16 |
| **OBIES** | Xescan | 10 |
| **OMICRON** | Omicron Laser | 16 |
| **OPTIKINETICS** | Solar System | 7 |
| **RAINBOW** | PRO Color Changer | 4 |
| **SAGITTER** | MW-575z | 16 |
| | MS-575 | 16 |
| | Prince 6ch | 6 |
| | SuperPrince 10ch | 10 |
| | Infinity HR 12ch. | 12 |
| | Infinity MSZ HR | 14 |
| | Infinity Live 20ch | 20 |
| | Tracer | 5 |
| | MASK COLOR ZOOM | 10 |
| | Digiflash | 2 |
| **S G M** | Galileo 1 | 6 |
| | Galileo 2 HR | 12 |
| | Galileo 3 HR | 14 |
| | Galileo 4 HR | 18 |
| | Giotto | 13 |
| | Giotto+Doors | 18 |
| | Giotto Spot 250 | 22 |
| | Giotto Spot 400 | 22 |
| | Giotto Spot 1200 | 18 |
| | Giotto Wash 1200 | 13 |
| | Victory 250 | 7 |
| | Victory2 250 | 10 |
| | Newton | 5 |
| | COLOUR Lab 250 | 6 |
| **SHOWPRO** | Cyberscan HR 13Ch. | 13 |
| **SLS** | Panscan 3 Junior | 5 |
| | Panscan4 HR | 15 |
| **SPACE CANNON** | IreosPro+art+ibi | 15 |
| | Easy | 10 |
| | Focus | 8 |
| | Target + Devil | 8 |
| **STARLITE** | Starlite 2G HR | 9 |
| | Starlite Mk5 | 19 |
| **STRONG** | Mini Scan Rotax | 6 |
| | Big Scan 3 | 12 |
| **STUDIO DUE** | Varybeam | 7 |
| | CityColor | 7 |
| | Live Pro 1200 CMY | 20 |
| | Live Pro 1200 PRISM | 16 |
| | Live Pro 1200 FROST | 16 |
| | Stratos HR | 15 |
| | Stratos CMY R.Gobo | 14 |
| | Stratos CMY Iris | 14 |
| | Minibeam | 6 |
| | Giant HR 9ch | 9 |
| | Light Reflector | 7 |
| | Predator | 6 |

| | | |
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| **SUMMA USA** | Summa hti | 9 |
| **SYSTEMI LUCE** | COLOUR Plus | 3 |
| **TAS** | Mini Ultrascan2 | 7 |
| | Crono | 9 |
| **THEATRE PROJECTS** | Sky Art | 7 |
| **VARI*LITE** | VIm m3 V5.1 | 10 |
| | VIm m4 v5.1 | 13 |
| | VI5/VI5B m3 v5.1 | 11 |
| | VI5 m4 v5.1 | 14 |
| | VI5 Arc m3 v5.1 | 10 |
| | VI5 Arc m4 v5.1 | 14 |
| | VI6 m3 v5.1 | 10 |
| | VI6 m4 v5.1 | 14 |
| | VI6 m5 v5.1 | 11 |
| | VI6 m6 v5.1 | 15 |
| | VI6B m5 v5.1 | 14 |
| | VI6B m6 v5.1 | 18 |
| | VI7 m7 v5.1 | 17 |
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| | VI7B m9 v5.1 | 24 |
| | VI7B m10 v5.1 | 27 |
| | VI2201 8bit Std. | 12 |
| | VI2201 16bit Std. | 14 |
| | VI2201 8bit Enhc | 15 |
| | VI2201 16bit Enhc | 17 |
| | VI24xx 8bit Std. | 10 |
| | VI24xx 16bit Std. | 12 |
| | VI24xx 8bit Enhc | 13 |
| | VI24xx 16bit Enhc | 15 |
| | Irideon AR5 HR 8Ch | 8 |
| | Irideon AR500 | 4 |
| VL1000TS+AS | 27/28 | |
| **X & Y** | Yoke XL | 7 |
| | MN 400 Wash | 12 |
| | MN 400 Spot | 13 |
| | MN 600 Wash | 14 |
| | MN 600 Spot | 14 |
| | Bim 1200 | 14 |

# Declaration of Conformity according to directives 89/336 EWG and 92/31 EWG

**Manufacturer's name:** MA Lighting Technology GmbH

**Manufacturer's address:** Dachdeckerstraße 16
D-97297 Waldbüttelbrunn
Germany

***declares that the product***

**Name of product:** MA ***grandMA, grandMA*** light, ***grandMA*** ultra-light, ***grandMA*** RPU

**Type:** MA GM

***complies with the following product specifications:***

**Safety:** EN60065, EN60950

**EMV (EMC):** EN55103-1 (E1), EN50081-1
EN55103-2 (E2), EN50082-1

**Additional information:** DMX512 and analogue inputs and outputs must be shielded and the shielding must be connected to the earthing resp. to the housing of the corresponding plug.

Dipl. Ing. Michael Adenau

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